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ANTHROPOMETRY OF LAW ENFORCEMENT OFFICERS

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present and future law enforcement populations as well as for the civilian and military communities.

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SUMMARY

An anthropometric data base for law enforcement officers has been developed by the Human Factors Division (Code 3400) of the Naval Electronics Laboratory Center (NELC) for the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards.

The purpose of establishing the data base was to compile statistics needed for sizing body gear and protective equipment. The plans for collecting the data were developed after interviews with law enforcement officials and manufacturers of police equipment, consultations with physical anthropologists, and a review of pertinent anthropometric literature.

The data base consists of two components: detailed body measurements of approximately 3,000 male law enforcement officers and short form survey responses on the height, weight, and age of approximately 10,000 additional officers.

Detailed body measurements were taken of 23 critical dimensions of law enforcement officers. The dimensions are those which would be most useful for sizing body gear and protective equipment. These measurements were based on municipal, county, and state police as well as prison guards. Measurements were made in 17 different regions of the United States in order to obtain a broad geographic sample and to collect data on officers with a variety of ethnic backgrounds.

The short-form survey descriptive statistics were collected on the height, weight, and age of approximately 10,000 law enforcement officers on the staffs of different agencies in most of the United States.

The information obtained from these two data collection efforts has been encoded on cards for computer processing. The results of some of the analyses of the data are contained in this report.

The main body of this report describes some of the general procedures and findings of the study and presents tables summarizing the results of the data collection efforts. The appendices contain detailed information about the development and execution of this study, and present tables providing detailed statistics about the different categories and subcategories (eg, experience, agency, region, and ethnic background) into which the data on the law enforcement officers could be divided.

The publication of these findings should facilitate the development of effective sizing techniques for body gear and protective equipment for law enforcement officers. The data base developed by this study should be useful not only for present-day law enforcement agencies in the particular areas studied, but may be applied, by matched sampling techniques, to law enforcement agencies in other areas and times regardless of how their present or future composition may be affected by variations in entrance requirements or ethnic distributions. In addition, the data collected should augment existing anthropometric data banks and improve their usefulness for civilian and military applications as well as for law enforcement agencies.

ADMINISTRATIVE INFORMATION

This study was conducted by the Human Factors Division, Code 3400, of the Naval Electronics Laboratory Center (NELC) for the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards at Gaithersburg, Maryland, under the project monitorship of Avery T. Horton.

FOREWORD

Following a Congressional mandate* to develop new and improved techniques, systems, and equipment to strengthen law enforcement and criminal justice, the National Institute of Law Enforcement and Criminal Justice (NILECJ) has established the Law Enforcement Standards Laboratory (LESL) at the National Bureau of Standards. LESL's function is to conduct research that will assist law enforcement and criminal justice agencies in the selection and procurement of quality equipment.

In response to priorities established by NILECJ, LESL is (1) subjecting existing equipment to laboratory testing and evaluation and (2) conducting research leading to the development of several series of documents, including national voluntary equipment standards, user guidelines, state-of-the-art surveys and other reports.

This document, Anthropometry of Law Enforcement Officers, has been prepared by NELC for LESL and issued by NILECJ. Additional guidelines as well as other documents will be issued under the LESL program in the areas of protective equipment, communications equipment, security systems, weapons, emergency equipment, investigative aids, vehicles and clothing.

Technical comments and suggestions concerning the subject matter of this report are invited from all interested parties. Comments should be addressed to the Program Manager for Standards, National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice, Washington, D.C. 20530.

Lester D. Shubin
Program Manager for Standards
National Institute of Law Enforcement
and Criminal Justice

*Section 402(b) of the Omnibus Crime Control and Safe Streets Act of 1968, as amended.

CONTENTS

	Page
1.0 INTRODUCTION	5
1.1 Background	5
1.2 Approach	6
2.0 METHOD	7
2.1 Body Measurement Survey	7
2.2 Short-form Survey for Height, Weight, and Age Data	14
3.0 BODY MEASUREMENT SURVEY RESULTS	17
3.1 Detailed Measurement Information for the Total Sample	19
3.2 Summary Data for Each Measurement by Sample Categories and Subcategories	73
3.3 Means and Standard Deviations of All Measurements for Each Sample ..	105
4.0 SHORT-FORM SURVEY RESULTS	117
4.1 Summary Data for Each Measurement by Sample Groupings	117
4.2 Means and Standard Deviations of all Measurements for Each Sample Grouping	121
5.0 ADDITIONAL DATA ANALYSIS	125
5.1 Selected Bivariate Tables	125
5.2 Estimated and Measured Height and Weight	129
5.3 Comparison of Short-form Survey with Body Measurement Data	133
6.0 RELATION TO OTHER ANTHROPOMETRIC STUDIES	137
6.1 Background	137
6.2 Related Studies	138
6.3 Comparison Data	139
7.0 ADDITIONAL APPLICATIONS OF THE LAW ENFORCEMENT OFFICER ANTHROPOMETRIC DATA BASE	149
7.1 Matched Samples	149
7.2 Estimates of Additional Dimensions	149
8.0 ACKNOWLEDGEMENTS	151
APPENDIX A: SURVEY PROCEDURES	159
A-1 Body Measurement Survey	161
A-2 Short-form Survey	175
APPENDIX B: BODY MEASUREMENT DATA – DETAILED SUMMARY DATA BY SAMPLE CATEGORIES AND SUBCATEGORIES	179
B-1 Experience	179
B-2 Agencies	187
B-3 Regions	197
B-4 Ethnic Backgrounds	233

CONTENTS (Continued)

	Page
APPENDIX C: STATISTICAL TREATMENTS	253
APPENDIX D: TRIGGER POSITION MEASURING DEVICE	259
APPENDIX E: PORTABLE ANTHROPOMETRIC BENCH	263

ILLUSTRATIONS

1	Index of body measurements	8
2	Regions included in the body measurement survey	12
3	Anthropometric measuring bench and pertinent equipment	13
4	Regions included in the short-form survey	14
A-1	Body measurement survey form	162
A-2	Measuring apparatus	166
A-3	Measuring instruments	166
A-4	Information handout sheet given to each participating officer	169
A-5	Typical announcement bulletin	170
A-6	Typical measuring facility	171
A-7	Short-form survey response sheet	176
A-8	Letter requesting permission for short-form survey	178
D-1	Trigger position measuring device	261
D-2	Specifications for trigger position measuring device	262
E-1	Portable anthropometric bench	264
E-2	Specifications for portable anthropometric bench	266

TABLES

1	Body measurements and their application	11
2	Regions included in the body measurement survey	12
3	Regions included in the short-form survey	15
4	Measured height versus age	126
5	Measured weight versus age	127
6	Measured height versus estimated height	130
7	Measured weight versus estimated weight	131
8	Differences between measured and estimated body dimensions	132
9	Short-form survey data versus body measurement survey data	134
10	Comparison of results obtained by different types of reporting procedures for height and weight	135
11	Anthropometric surveys of males	137
12	Major anthropometric survey results	140
13	Ranked results of major anthropometric surveys	142
A-1	Order of body measurements obtained	173

1.0 INTRODUCTION

Because the law enforcement agencies are composed of individuals who serve the public in an increasingly dangerous profession, it is necessary to afford them the most effective body gear and protective equipment possible. By establishing an anthropometric data base for law enforcement officers, the designers and manufacturers of these types of equipment will be able to produce more effective products and reduce the problems associated with sizing and stocking these items.

1.1 BACKGROUND

Anthropometry is the physical measurement of man. Anthropometric data are essential for the effective sizing and efficient procurement of personal equipment. Body measurement information is also required for the design and improvement of work spaces and vehicle interiors.

Extensive anthropometric studies have been conducted, particularly during and since World War II, but most of them have been concerned with special military populations or with extremely restricted and specific civilian populations. Making predictions for one population based on the data obtained from a different population is a risky procedure which may lead to costly errors.

Because law enforcement officers have traditionally been selected according to special physical entrance requirements, they differ from other groups for which anthropometric data are available. Even in the absence of entrance selection criteria, because of the physical training demands and the strenuous duty requirements imposed on these officers, those who serve in field situations will usually possess physical characteristics differing from those of the general civilian population.

Comparison of the data collected in this study with that obtained in other studies indicates substantial differences in critical body dimensions (see Section 6). Yet, manufacturers have, of necessity, designed and produced equipment based on information from these other studies because information on law enforcement officers was lacking.

As increasingly sophisticated equipment is made available to law enforcement officers, the degree of tolerance allowed for this special equipment is becoming narrower, and better-fitting gear is becoming more necessary for optimum utilization. This is particularly true of rigid body armor, but it also applies to other equipment such as helmets, face masks, respirators, gloves, weapon stocks, and hand-held or body-carried support systems. In addition, with the increasing amount of equipment carried in law enforcement vehicles, information on arm and leg reach functions is necessary to determine the optimal location for ease of operator control and utilization of the various items of equipment.

The anthropometric data base which has been amassed by this study should facilitate the development of properly sized body gear and protective equipment for law enforcement officers. Because the study was designed to obtain data on a wide variety of sizes of officers from different types of agencies and regions and with different ethnic backgrounds, by using matched sampling techniques, this data base should permit the sizing of equipment which may be effectively utilized by present and future law enforcement officers regardless of what variations in body size and shape may currently exist, and regardless of what changes the composition of law enforcement agencies may undergo in terms of altered entrance requirements or ethnic distributions.

1.2 APPROACH

In order to ensure that the anthropometric data collected would be most useful to those producing body gear and protective equipment for law enforcement personnel, preliminary investigations were conducted.

Interviews with law enforcement officials indicated the types of protective gear and equipment in which they were interested. These interviews also led to the identification of some of the manufacturers of equipment considered to be well designed and sized. Contact with these manufacturers led to the development of a generalized list of body dimensions about which designers and research personnel thought information was needed for effective sizing. Consultations with physical anthropologists resulted in the identification of 23 specific body dimensions which would be most useful for meeting the needs of the manufacturers. These consultations also resulted in the determination of the measuring techniques which could be employed to establish an anthropometric data base.

As a result of these preliminary investigations, a detailed plan for collecting anthropometric data on law enforcement officers was devised.

2.0 METHOD

The plan for collecting the data base involved two distinct efforts which were carried out concurrently. One involved taking detailed measurements of critical body dimensions and the other involved collecting descriptive statistics of height, weight, and age.

2.1 BODY MEASUREMENT SURVEY

The purpose of the body measurement survey was to obtain detailed measurements on 23 critical body dimensions of a representative sample of approximately 3,000 law enforcement officials.

These 23 critical dimensions had been determined by the preliminary investigation to be the ones which would be most useful in improving the sizing of equipment for law enforcement officers. These body dimensions are depicted in figure 1 and are listed in table 1. The table also indicates which measurements are most useful for the sizing of different types of body gear and protective equipment as well as workspace configurations. A precise definition of each of the measurements is presented in Section 3.1.

In obtaining the sample of law enforcement officers for the body measurement survey, a prime objective was to collect data from different regions of the United States. Additional objectives included obtaining a sample of law enforcement officers from different types of agencies and from different ethnic backgrounds. Because the physical criteria for admission to law enforcement agencies are changing, a special effort was made to obtain measurements of recently appointed officers and recruits.

In fulfilling these objectives, body measurements were taken from 2,993 officers in 17 regions of the contiguous United States.

The regions, listed in table 2 and indicated in figure 2, were selected to ensure that adequate samples from different areas of the country would be obtained rather than to represent the actual distribution of the population. Another consideration in selecting the regions examined was the likelihood of increasing the representation of those from minority groups in the survey.

The agencies and number of personnel from whom measurements were obtained for the survey are as follows:

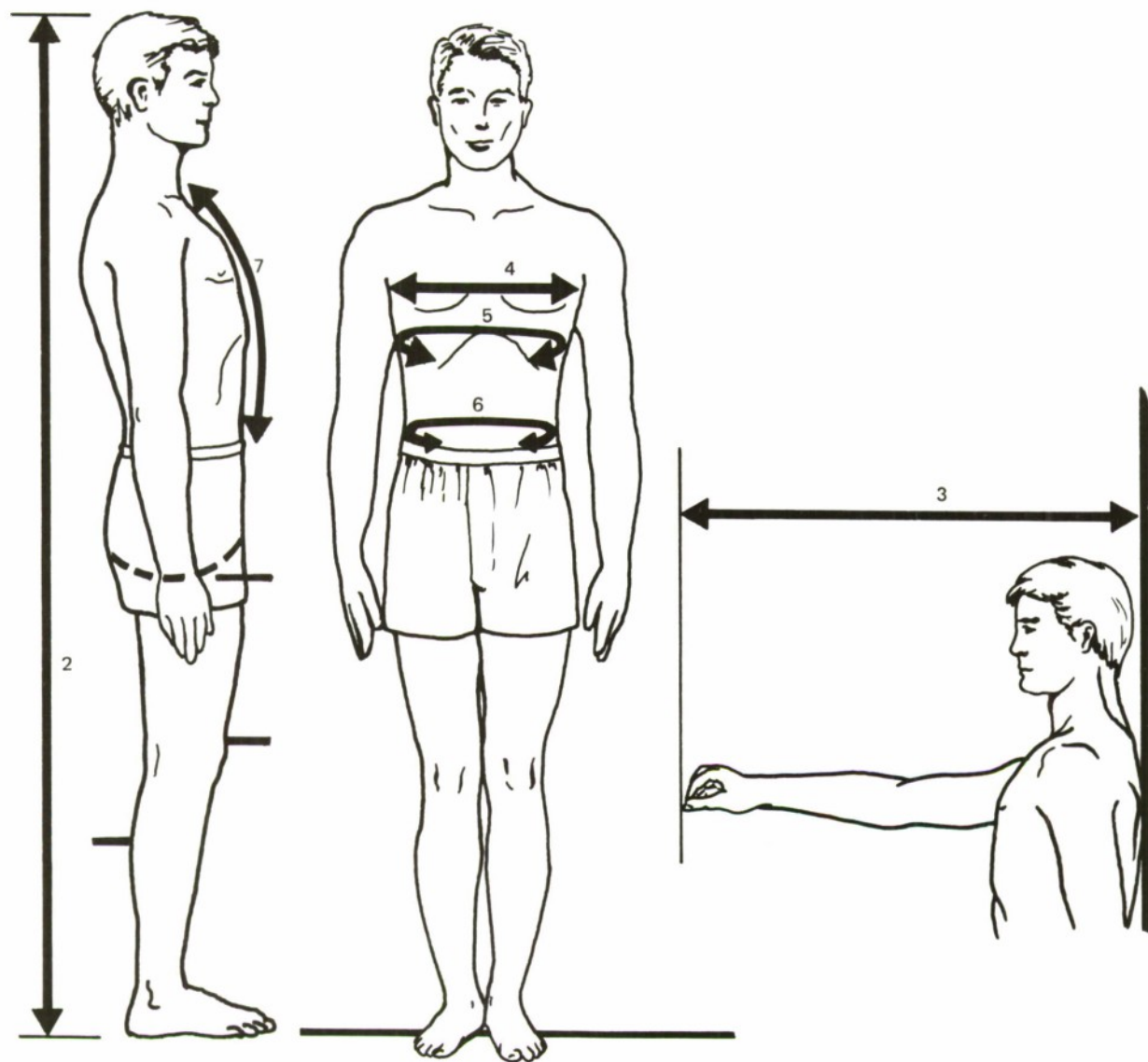
Police Departments	2,060
Sheriff's Departments	521
Highway Patrol	176
Prison Guards	236

Samples of these numbers should be adequate to identify agency differences while ensuring that the more numerous law enforcement agencies are given better representation.

Approximately one-third of the sample included men who were recently appointed officers or recruits.

Most of the measurements could be taken with standard anthropometric equipment.

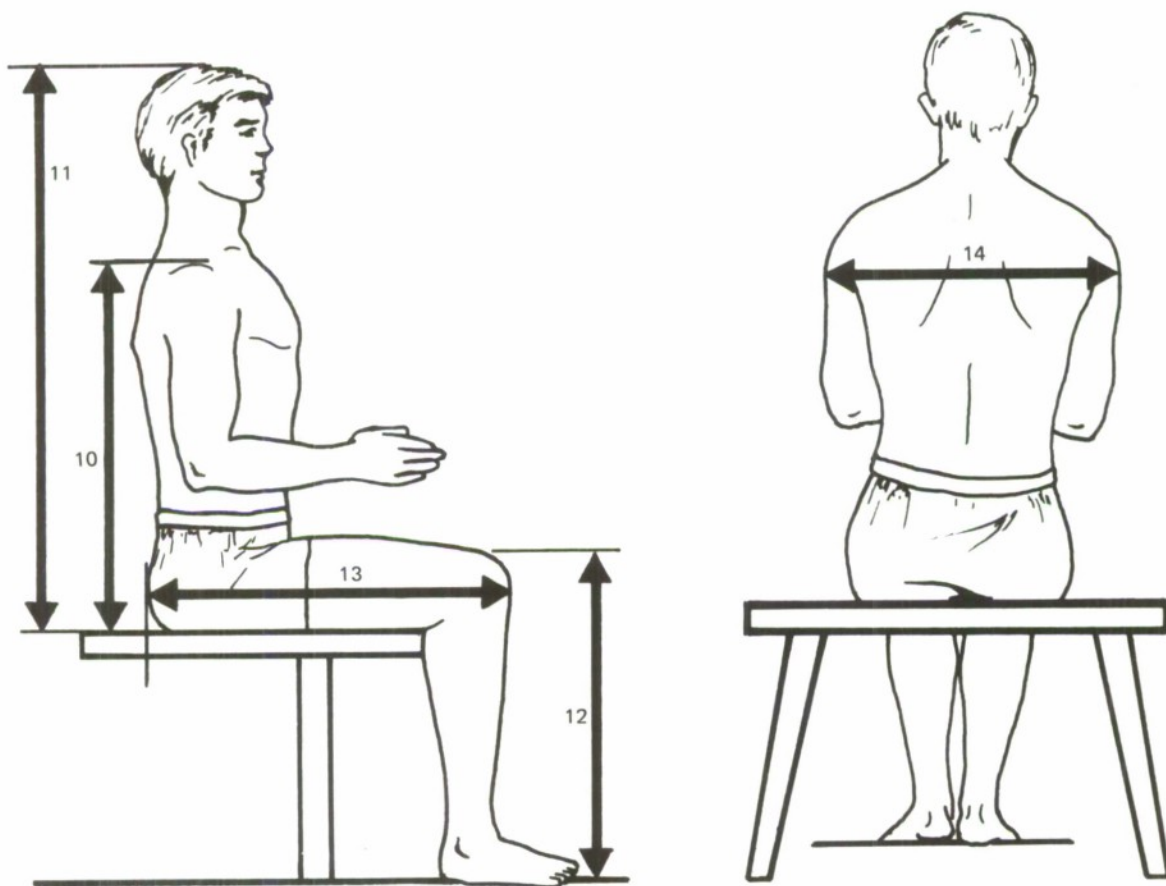
Interviews with the manufacturers of weapons and with law enforcement officials indicated the need for information about the location of the trigger relative to the heel of the weapon stock. Because no conventional anthropometric device existed which would



1. Weight — not illustrated
2. Height
3. Functional reach
4. Chest breadth
5. Chest circumference
6. Waist circumference
7. Waist front

Figure 1. Index of body measurements.*

*Numbers indicate the order in which the measurements were made.



- 10. Shoulder height sitting
- 11. Sitting height
- 12. Knee height sitting
- 13. Buttock-knee length
- 14. Shoulder breadth

Figure 1. (Continued).

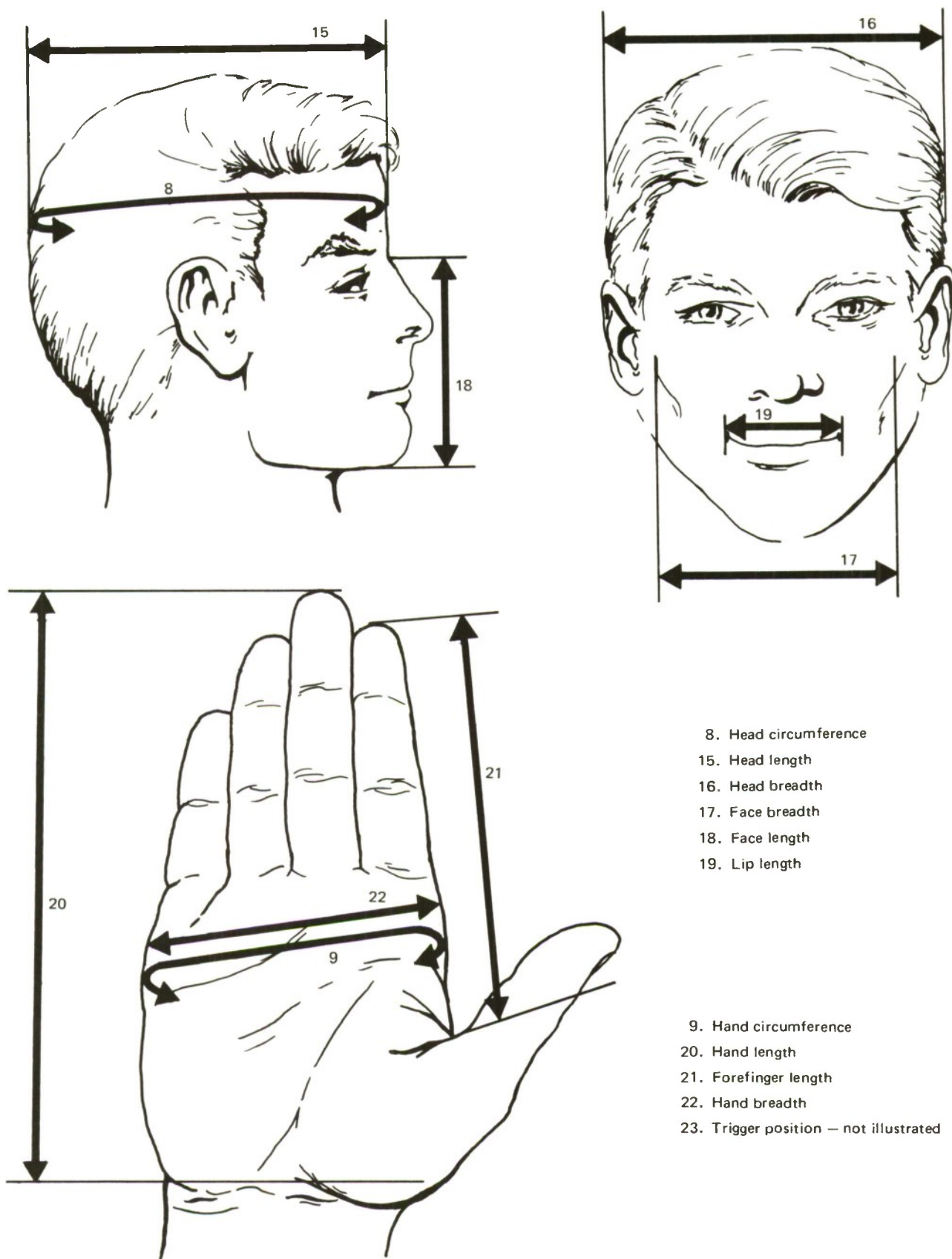


Figure 1. (Continued).

TABLE 1. BODY MEASUREMENTS AND THEIR APPLICATION.

Measurements		Body Armor	Rigid Body Armor	Helmets	Face Masks	Respirators	Gloves	Weapon Stocks	Handheld Systems	Body Carried Support System	Arm Reach (Work Space)	Leg Reach (Work Space)	Personnel Clearance
BODY	Weight	X	X							X			
	Height	X	X							X	X	X	X
HEAD	Head circumference			X									
	Head length			X									
	Head breadth			X									
FACE	Face breadth			X	X								
	Face length				X	X							
	Lip length				X	X							
TORSO	Chest breadth	X	X							X			X
	Chest circumference	X	X							X			
	Waist circumference	X	X							X			
	Waist front	X	X							X			
	Shoulder height sitting		X							X	X		X
	Shoulder breadth		X										X
	Sitting height												X
ARMS	Functional reach										X		X
LEGS	Buttock-knee length											X	X
	Knee height sitting											X	X
HANDS	Hand circumference						X		X				
	Hand length						X		X				
	Hand breadth						X		X				
	Finger length							X	X				
	Trigger position							X	X				

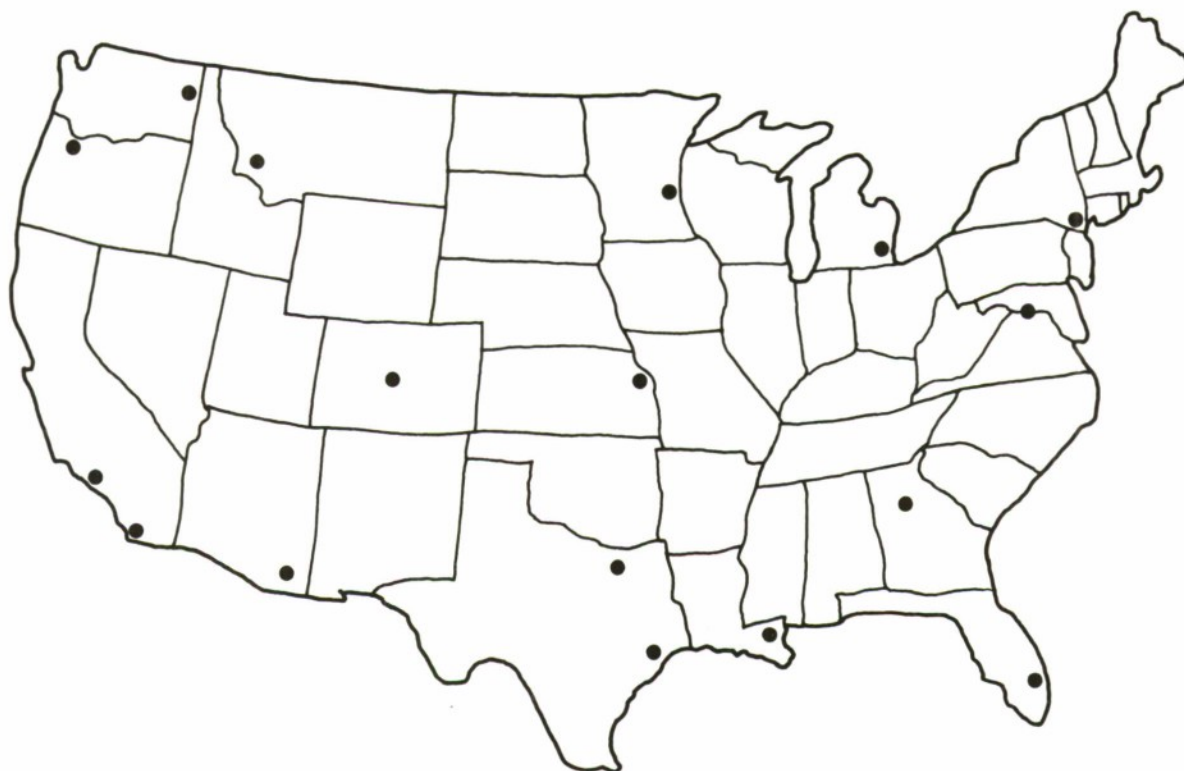


Figure 2. Regions included in the body measurement survey.

TABLE 2. REGIONS INCLUDED IN THE BODY MEASUREMENT SURVEY.

San Diego	New York City
Los Angeles	Detroit
Phoenix/Tucson	Minneapolis/St. Paul
Dallas/Fort Worth	Kansas City
Houston/Galveston	Denver
New Orleans/Baton Rouge	Helena/Butte
Miami/Fort Lauderdale	Spokane
Atlanta	Portland
Washington, DC	

supply that information, the trigger position measuring device, described in Appendix D, was designed.

Because the measuring was conducted at locations throughout the United States at agencies where facilities were not the same, a portable measuring bench, with a standard seat height and an adjustable foot rest, described in Appendix E, was designed. This bench, when collapsed, served as a container for carrying the anthropometric equipment and related items. The bench and some of the standard anthropometric measuring equipment are depicted in figure 3.



Figure 3. Anthropometric measuring bench and pertinent equipment.

The results obtained from the body measurement survey are presented in Section 3 and Appendix B. Section 3 contains, for the total sample, the detailed statistics generated for each of the body dimensions measured. It also contains summaries of the results obtained by processing the data for each of the major subcategories of officers by experience, agency, region, and ethnic background. Appendix B contains detailed statistical summaries of data from each of the subcategories.

The result of the body measurement survey has been the compilation of data needed for effectively sizing body gear and protective equipment for law enforcement officers. This data base may be used for law enforcement officers in general as well as for those belonging to specific groups, agencies, regions, and ethnic backgrounds.

2.2 SHORT-FORM SURVEY FOR HEIGHT, WEIGHT, AND AGE DATA

The purpose of the height, weight, and age survey was to obtain descriptive statistics of key factors concerning the composition of law enforcement agencies in different parts of the United States (figure 4 and table 3). Saturation sampling, in which information on all the personnel of a given agency (or subdivision of an agency) was obtained, was possible for eight agencies in different regions.

The results obtained from this height, weight, and age survey are presented in section 4 which contains summary statistics generated for each of the items analyzed by agency, region, reporting procedure, and sex. This effort has resulted in the compilation of statistics needed for effectively producing and stocking adequate numbers of body gear and protective equipment for law enforcement agency personnel.

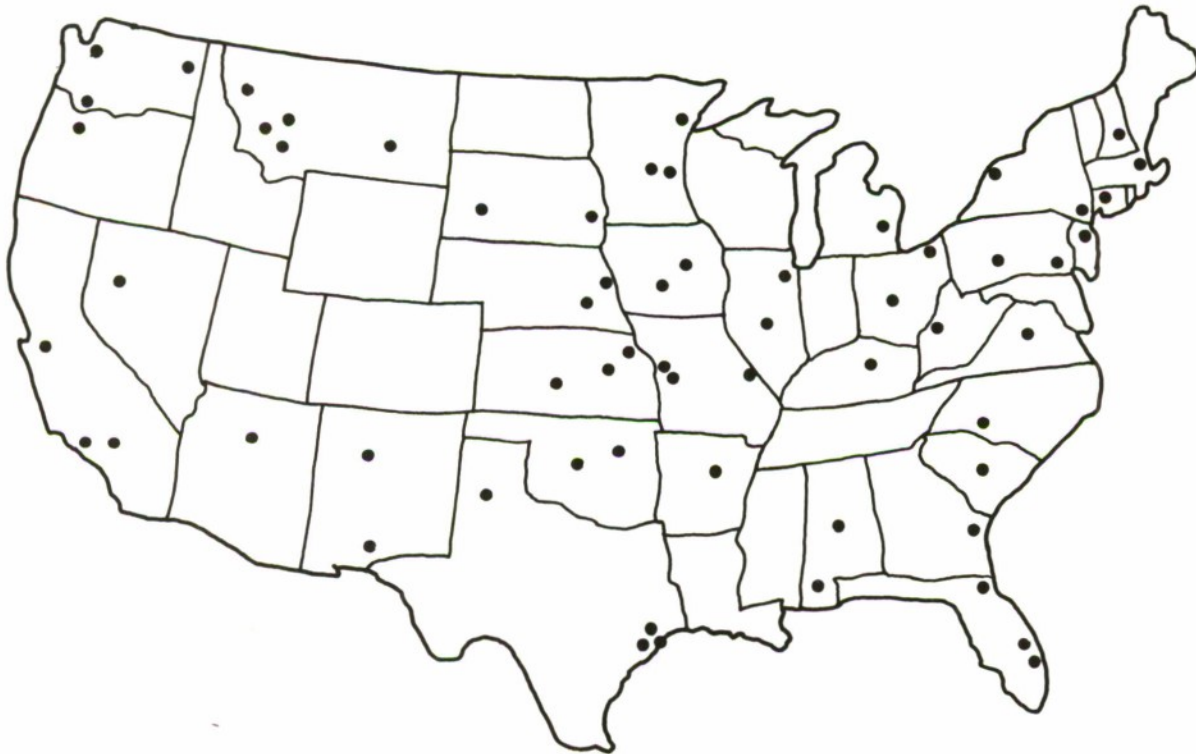


Figure 4. Regions included in the short-form survey.

TABLE 3. REGIONS INCLUDED IN THE SHORT-
FORM SURVEY.

MASSACHUSETTS

Boston

NEW HAMPSHIRE

Manchester

CONNECTICUT

Hartford

NEW JERSEY

Newark

NEW YORK

New York City

Buffalo

PENNSYLVANIA

Pittsburgh

Philadelphia

FLORIDA

Jacksonville

Miami

Miami Beach

Fort Lauderdale

Dade County Sheriff's Department

ALABAMA

Birmingham

Mobile

KENTUCKY

Lexington

OHIO

Columbus

Cleveland

DISTRICT OF COLUMBIA

Washington

Washington Police Academy

VIRGINIA

Richmond

WEST VIRGINIA

Charleston

NORTH CAROLINA

Charlotte

SOUTH CAROLINA

Columbia

GEORGIA

Savannah

ILLINOIS

Oak Park

Springfield

MISSOURI

St. Louis

Kansas City

St. Joseph

KANSAS

Topeka

Leavenworth, U.S. Penitentiary

Wichita

NEBRASKA

Omaha

Lincoln

TABLE 3. (Continued).

MICHIGAN

Lansing

IOWA

Des Moines

Cedar Rapids

MINNESOTA

St. Paul

Minneapolis

Hennepin County Sheriff's Department

Bloomington

Duluth

SOUTH DAKOTA

Sioux Falls

Rapid City

MONTANA

Billings

Deer Lodge State Penitentiary

Helena

Butte

Missoula

CALIFORNIA

Los Angeles Police Academy

Riverside

San Jose

OREGON

Portland

Beaverton State Police

Multnomah State Police

Milwaukie State Police

ARKANSAS

Little Rock

OKLAHOMA

Oklahoma City

Tulsa

TEXAS

Houston Police Academy

Harris County Sheriff's Department

Harris County Sheriff's Academy

Galveston Police Department

Galveston County Sheriff's Department

Rosharon, Texas State Correctional Facility

Lubbock Police Department

ARIZONA

Flagstaff

NEW MEXICO

Albuquerque

Las Cruces

NEVADA

Reno

WASHINGTON

Seattle

Spokane Police Department

Spokane Sheriff's Department

Vancouver

3.0 BODY MEASUREMENT SURVEY RESULTS

This series of sections presents in detail the body measurement survey information for the total sample, and provides summary data for each of the sample categories and subcategories. The data are based on measurements of 23 critical body dimensions taken from 2,993 officers in 17 regions of the United States. Each section is designed to provide readily usable data which should answer most of the major needs of those consulting the material. More detailed summary data for each of the categories and subcategories are contained in Appendix B.

Section 3.1 provides, for each measurement, complete, standard statistical treatments of the data obtained from the total sample. A discussion of the statistical treatments employed is contained in Appendix C.

Section 3.2 permits, for each measurement, the ready comparison of the summary statistics obtained from the different sample categories and subcategories.

Section 3.3 permits, for each sample category and subcategory, the ready comparison of the means and standard deviations obtained on all the measurements.

3.1 DETAILED MEASUREMENT INFORMATION FOR THE TOTAL SAMPLE

This section presents anthropometric data based on the total sample. For each of the 23 critical body dimensions as well as for demographic data of age and length of service, the presentation of the data follows the format described below. Data for each measurement are depicted on facing pages. The definition of the measurement, a photograph of the dimension being measured, and a graph indicating the distribution obtained for the total sample is on one page. Standard statistical treatments, including the following statistics,* are on the facing page:

- mean
- standard error of the mean
- standard deviation
- standard error of the standard deviation
- symmetry – veta I
- kurtosis – veta II
- coefficient of variation
- number of subjects
- statistical values at selected percentiles

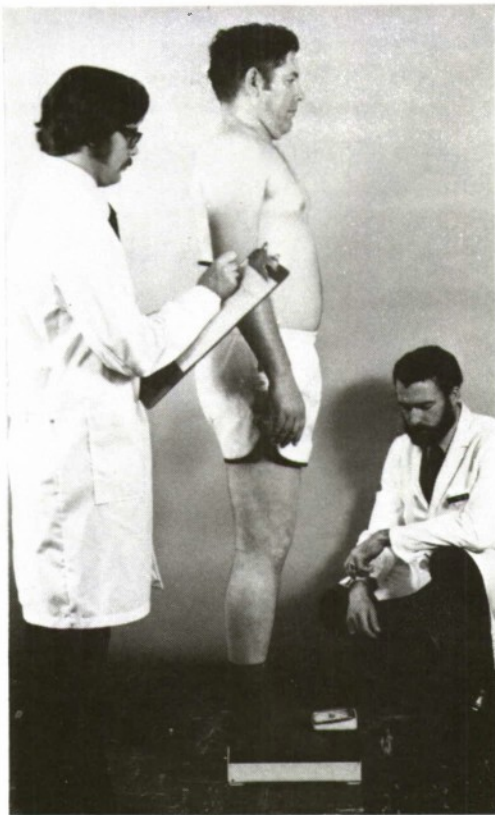
interval analysis (between 25 and 50 intervals were designed for each measurement) including for each range of intervals:

- frequency
- cumulative frequency
- frequency percent
- cumulative percent

This section also presents the results for the demographic data, indicating the numbers of respondents for each category and the percent of the sample included in that category.

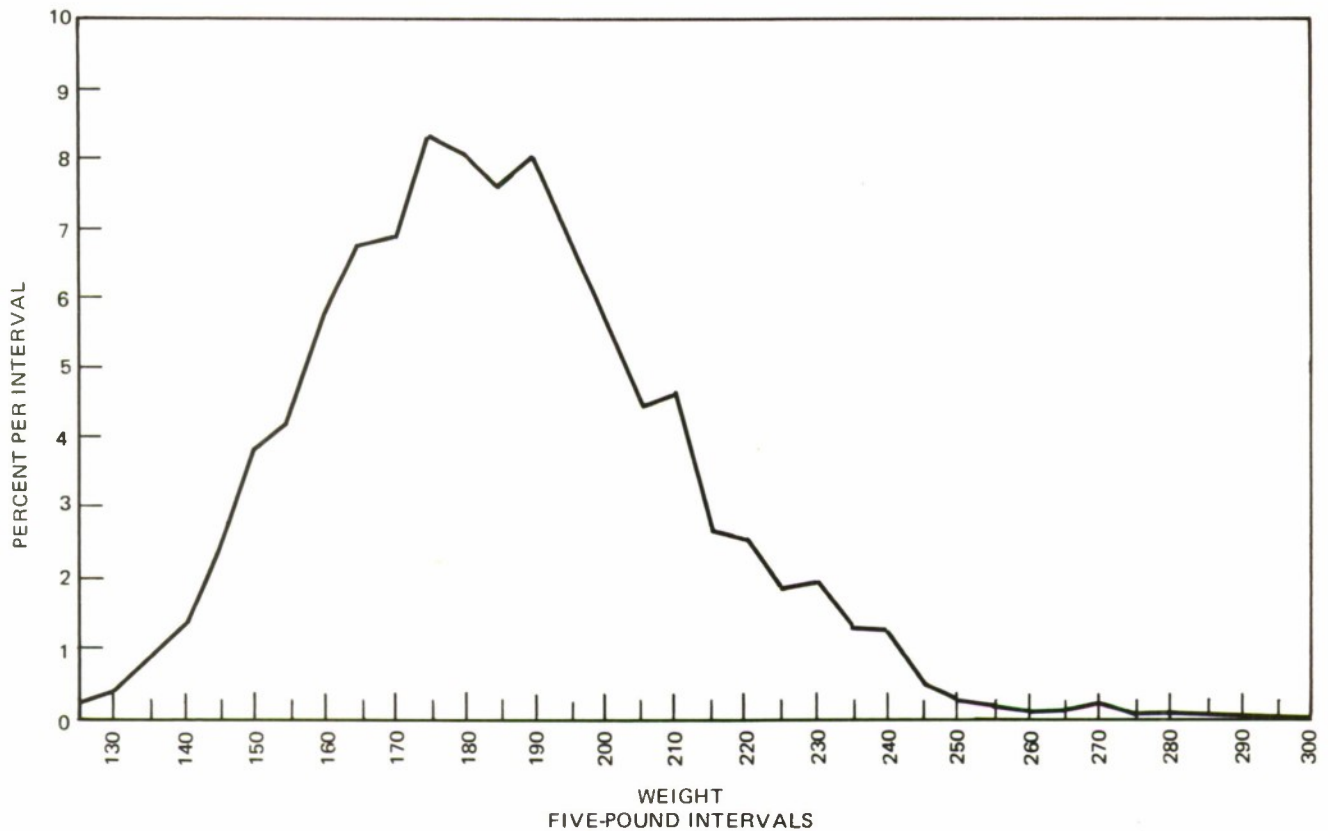
The information provided in this section permits an immediate assessment of the characteristics of the entire sample population of 2,993.

*Discussed in detail in Appendix C



WEIGHT

WEIGHT: Subject, wearing shorts, stands on the center of the scale platform. Weight is measured to the nearest half pound. A portable scale is used.



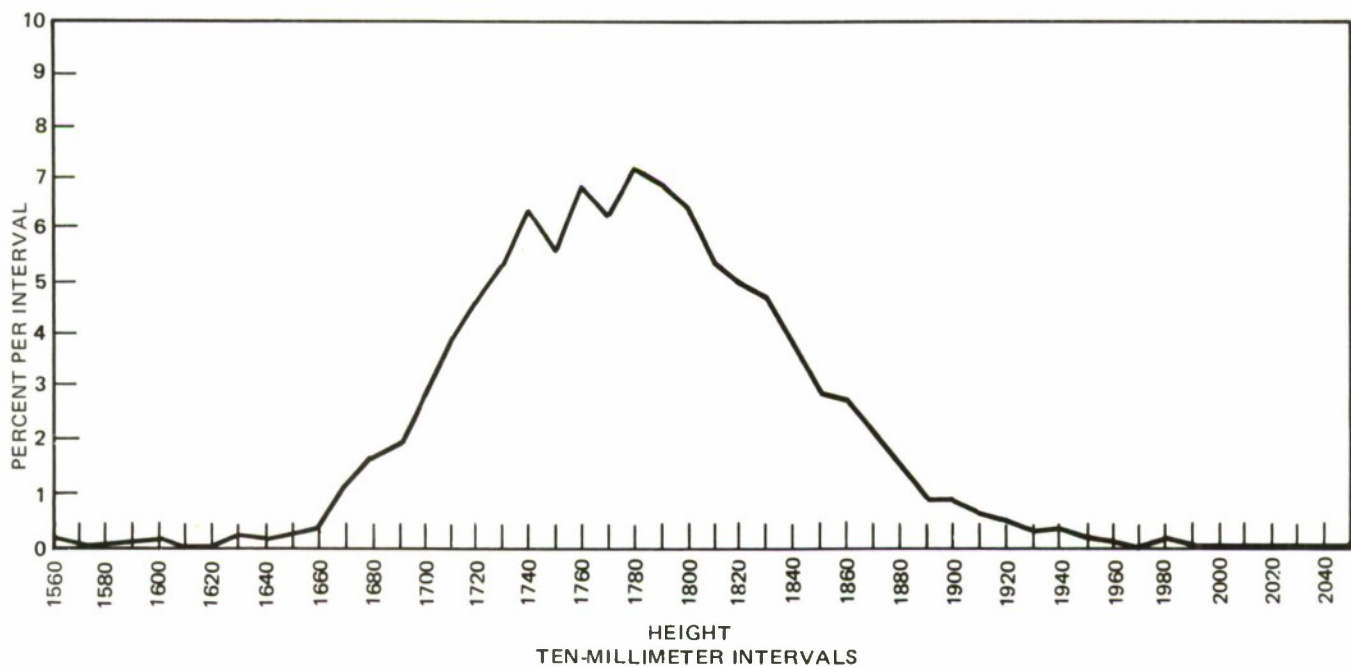
MEASUREMENT WEIGHT

KILOGRAMS		POUNDS	RANGES*	F	CUMF	FPCT	CUMPCT
83.31	MEAN VALUE	183.68	315.5- 320.5	2	2991	0.07	100.00
0.22	SE (MEAN)	0.48	310.5- 315.5	0	2989	0.0	99.93
11.95	SD DEVIATION	26.34	305.5- 310.5	2	2989	0.07	99.93
0.15	SE (SD DEV)	0.34	300.5- 305.5	1	2987	0.03	99.87
			295.5- 300.5	1	2986	0.03	99.83
	****		290.5- 295.5	2	2985	0.07	99.80
			285.5- 290.5	2	2983	0.07	99.73
SYMMETRY- - -VETA I	= 0.76		280.5- 285.5	2	2981	0.07	99.67
KURTOSIS- - -VETA II	= 4.37		275.5- 280.5	2	2979	0.07	99.60
COEF. OF VARIATION	= 14.3%		270.5- 275.5	6	2977	0.20	99.53
			265.5- 270.5	7	2971	0.23	99.33
	*****		260.5- 265.5	4	2964	0.13	99.10
			255.5- 260.5	6	2960	0.20	98.96
NUMBER OF SUBJECTS =	2991		250.5- 255.5	9	2954	0.30	98.76
			245.5- 250.5	11	2945	0.37	98.66
	*****		240.5- 245.5	15	2934	0.50	98.09
			235.5- 240.5	35	2919	1.17	97.59
THE PERCENTILES			230.5- 235.5	38	2884	1.27	96.42
			225.5- 230.5	59	2846	1.97	95.15
KILOGRAMS		POUNDS	220.5- 225.5	56	2787	1.87	93.18
			215.5- 220.5	75	2731	2.51	91.31
118.78	99TH	261.87	210.5- 215.5	80	2656	2.67	88.80
110.93	98TH	244.56	205.5- 210.5	136	2576	4.55	86.12
107.94	97TH	237.97	200.5- 205.5	134	2440	4.48	81.58
104.38	95TH	230.11	195.5- 200.5	170	2306	5.68	77.10
98.83	90TH	217.89	190.5- 195.5	205	2136	6.85	71.41
94.92	85TH	209.26	185.5- 190.5	239	1931	7.99	64.56
92.41	80TH	203.74	180.5- 185.5	228	1692	7.62	56.57
90.11	75TH	198.65	175.5- 180.5	242	1464	8.09	48.95
88.21	70TH	194.47	170.5- 175.5	247	1222	8.26	40.86
86.55	65TH	190.82	165.5- 170.5	206	975	6.89	32.60
85.11	60TH	187.65	160.5- 165.5	203	769	6.79	25.71
83.67	55TH	184.47	155.5- 160.5	175	566	5.85	18.92
82.19	50TH	181.19	150.5- 155.5	127	391	4.25	13.07
80.77	45TH	178.06	145.5- 150.5	116	264	3.88	8.83
79.37	40TH	174.98	140.5- 145.5	69	148	2.31	4.95
78.00	35TH	171.95	135.5- 140.5	40	79	1.34	2.64
76.48	30TH	168.61	130.5- 135.5	23	39	0.77	1.30
74.83	25TH	164.98	125.5- 130.5	10	16	0.33	0.53
73.16	20TH	161.29	120.5- 125.5	6	6	0.20	0.20
71.28	15TH	157.15					
68.89	10TH	151.88					
66.03	5TH	145.57	* POUNDS				
64.08	3RD	141.28					
62.64	2ND	138.10					
60.57	1ST	133.52					



HEIGHT

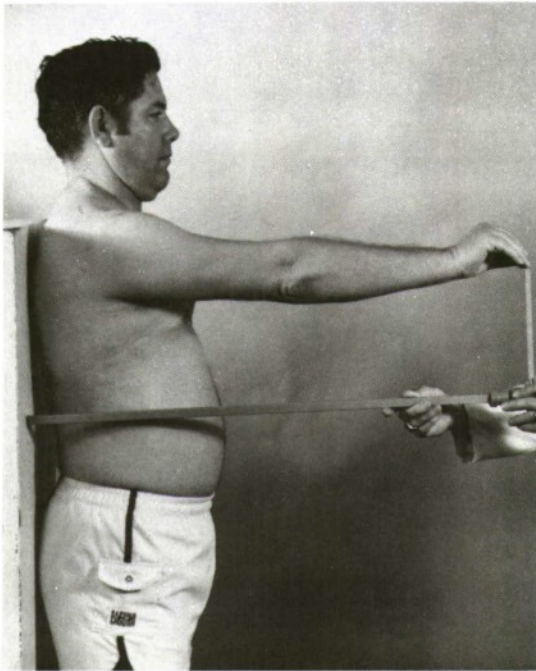
HEIGHT: Subject stands erect, head in the Frankfort plane, heels together, and weight distributed equally on both feet. With the arm of the anthropometer firmly touching the scalp, the vertical distance from the standing surface to the top of the head is measured. An anthropometer is used.



MEASUREMENT HEIGHT

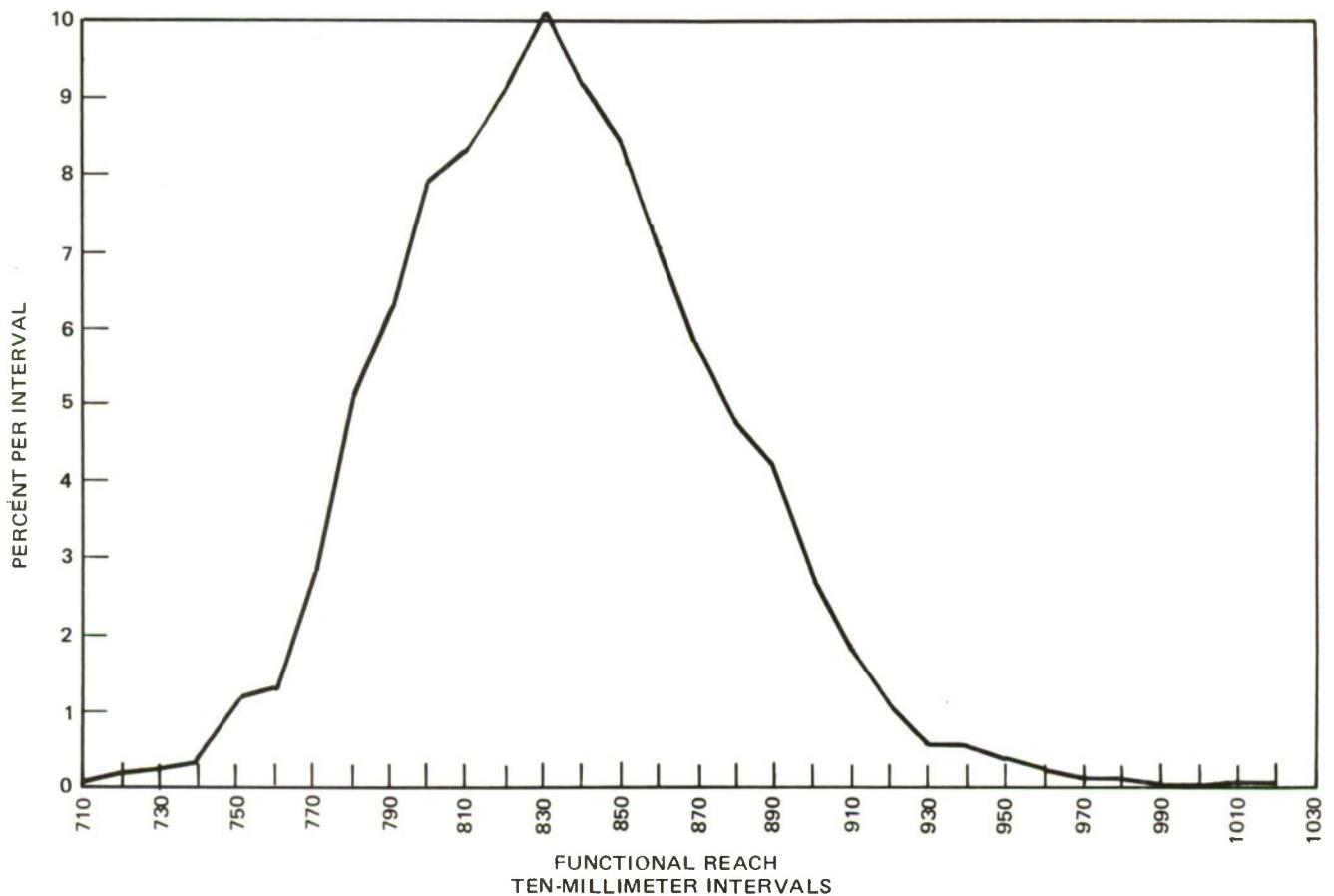
MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
1781.16	MEAN VALUE	70.12	2065.5-2075.5	1	2989	0.03	100.00
1.06	SE (MEAN)	0.04	2055.5-2065.5	0	2988	0.0	99.97
57.84	SD DEVIATION	2.28	2045.5-2055.5	0	2988	0.0	99.97
0.75	SE (SD DEV)	0.03	2035.5-2045.5	0	2988	0.0	99.97
			2025.5-2035.5	0	2988	0.0	99.97
	*****		2015.5-2025.5	1	2988	0.03	99.97
			2005.5-2015.5	1	2987	0.03	99.93
SYMMETRY - - - VETA I	= 0.33		1995.5-2005.5	1	2986	0.03	99.90
KURTOSIS - - - VETA II	= 3.28		1985.5-1995.5	0	2985	0.0	99.87
COEF. OF VARIATION	= 3.2%		1975.5-1985.5	2	2985	0.07	99.87
			1965.5-1975.5	0	2983	0.0	99.80
	*****		1955.5-1965.5	3	2983	0.10	99.80
			1945.5-1955.5	6	2980	0.20	99.70
NUMBER OF SUBJECTS	= 2989		1935.5-1945.5	11	2974	0.37	99.50
			1925.5-1935.5	9	2963	0.30	99.13
	*****		1915.5-1925.5	15	2954	0.50	98.83
			1905.5-1915.5	17	2939	0.57	98.33
			1895.5-1905.5	27	2922	0.90	97.76
			1885.5-1895.5	27	2895	0.90	96.85
THE PERCENTILES			1875.5-1885.5	46	2868	1.54	95.95
			1865.5-1875.5	65	2822	2.17	94.41
MILLIMETERS		INCHES	1855.5-1865.5	83	2757	2.78	92.24
1931.18	99TH	76.03	1845.5-1855.5	87	2674	2.91	89.46
1909.75	98TH	75.19	1835.5-1845.5	114	2587	3.81	86.55
1897.11	97TH	74.69	1825.5-1835.5	136	2473	4.55	82.74
1879.32	95TH	73.99	1815.5-1825.5	145	2337	4.85	78.19
1857.44	90TH	73.13	1805.5-1815.5	159	2192	5.32	73.34
1841.43	85TH	72.50	1795.5-1805.5	189	2033	6.32	68.02
1829.49	80TH	72.03	1785.5-1795.5	204	1844	6.83	61.69
1818.93	75TH	71.61	1775.5-1785.5	211	1640	7.06	54.87
1809.23	70TH	71.23	1765.5-1775.5	190	1429	6.36	47.81
1800.73	65TH	70.89	1755.5-1765.5	205	1239	6.86	41.45
1793.02	60TH	70.59	1745.5-1755.5	168	1034	5.62	34.59
1785.69	55TH	70.30	1735.5-1745.5	192	866	6.42	28.97
1778.60	50TH	70.02	1725.5-1735.5	160	674	5.35	22.55
1771.08	45TH	69.73	1715.5-1725.5	141	514	4.72	17.20
1763.38	40TH	69.42	1705.5-1715.5	119	373	3.98	12.48
1756.09	35TH	69.14	1695.5-1705.5	86	254	2.88	8.50
1747.33	30TH	68.79	1685.5-1695.5	56	168	1.87	5.62
1739.31	25TH	68.48	1675.5-1685.5	48	112	1.61	3.75
1730.74	20TH	68.14	1665.5-1675.5	33	64	1.10	2.14
1720.84	15TH	67.75	1655.5-1665.5	12	31	0.40	1.04
1709.27	10TH	67.29	1645.5-1655.5	8	19	0.27	0.64
1692.19	5TH	66.62	1635.5-1645.5	4	11	0.13	0.37
1680.85	3RD	66.17	1625.5-1635.5	5	7	0.17	0.23
1674.85	2ND	65.91	1615.5-1625.5	0	2	0.0	0.07
1664.57	1ST	65.53	1605.5-1615.5	0	2	0.0	0.07
			1595.5-1605.5	1	2	0.03	0.07
			1585.5-1595.5	0	1	0.0	0.03
			1575.5-1585.5	0	1	0.0	0.03
			1565.5-1575.5	0	1	0.0	0.03
			1555.5-1565.5	1	1	0.03	0.03

*MILLIMETERS



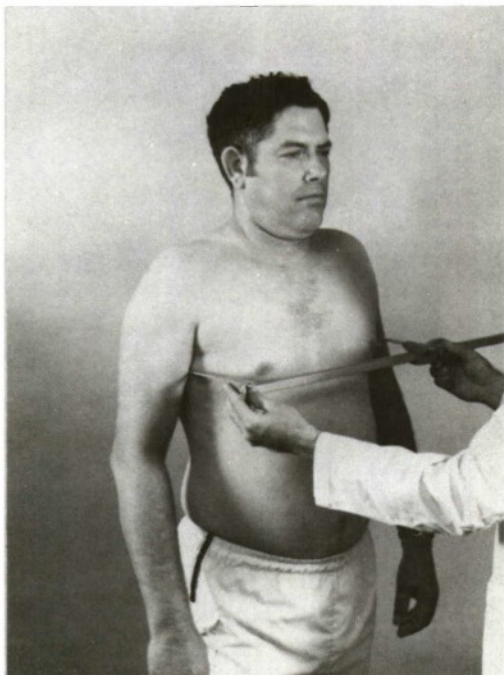
FUNCTIONAL REACH

FUNCTIONAL REACH: Subject stands erect against a wall, with his right arm extended forward horizontally, and with the tips of his thumb and index fingers pressed together; his shoulders must remain in contact with the wall. Functional reach is measured as the horizontal distance from the wall to the tip of the thumb. An anthropometer is used.



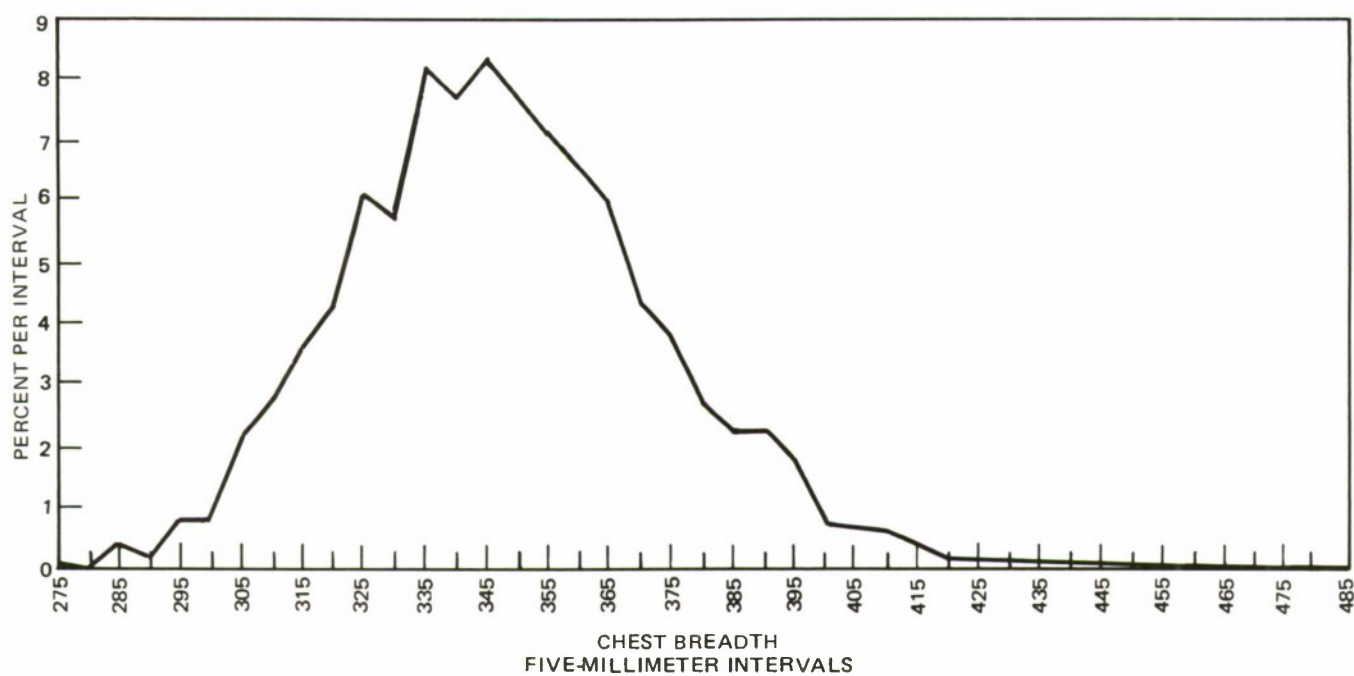
MEASUREMENT FUNCTIONAL REACH

MILLIMETERS			INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
829.70	MEAN VALUE		32.67	1010.5-1020.5	1	2987	0.03	100.00
0.77	SE (MEAN)		0.03	1000.5-1010.5	1	2986	0.03	99.97
42.00	SD DEVIATION		1.65	990.5-1000.5	0	2985	0.0	99.93
0.54	SE (SD DEV)		0.02	980.5-990.5	0	2985	0.0	99.93
				970.5-980.5	4	2985	0.13	99.93
* * * * *				960.5-970.5	4	2981	0.13	99.80
				950.5-960.5	7	2977	0.23	99.67
SYMMETRY - - - VETA I = 0.32				940.5-950.5	13	2970	0.44	99.43
KURTOSIS - - - VETA II = 3.24				930.5-940.4	16	2957	0.54	99.00
COEF. OF VARIATION = 5.1%				920.5-930.5	19	2941	0.64	98.46
				910.5-920.5	31	2922	1.04	97.82
* * * * *				900.5-910.5	54	2891	1.81	96.79
				890.5-900.5	82	2837	2.75	94.98
NUMBER OF SUBJECTS = 2987				880.5-890.5	125	2755	4.18	92.23
				870.5-880.5	142	2630	4.75	88.05
* * * * *				860.5-870.5	173	2488	5.79	83.29
				850.5-860.5	209	2315	7.00	77.50
				840.5-850.5	251	2106	8.40	70.51
				830.5-840.5	269	1855	9.01	62.10
THE PERCENTILES				820.5-830.5	299	1586	10.01	53.10
				810.5-820.5	271	1287	9.07	43.09
MILLIMETERS			INCHES	800.5-810.5	248	1016	8.30	34.01
940.60	99TH		37.03	790.5-800.5	236	768	7.90	25.71
923.27	98TH		36.35	780.5-790.5	186	532	6.23	17.81
912.56	97TH		35.93	770.5-780.5	151	346	5.06	11.58
900.62	95TH		35.46	760.5-770.5	86	195	2.88	6.53
885.16	90TH		34.85	750.5-760.5	49	109	1.64	3.65
874.09	85TH		34.41	740.5-750.5	35	60	1.17	2.01
864.81	80TH		34.05	730.5-740.5	11	25	0.37	0.84
856.92	75TH		33.74	720.5-730.5	5	14	0.17	0.47
849.90	70TH		33.46	710.5-720.5	5	9	0.17	0.30
843.95	65TH		33.23	700.5-710.5	4	4	0.13	0.13
838.17	60TH		33.00	*MILLIMETERS				
832.61	55TH		32.78					
827.41	50TH		32.57					
822.41	45TH		32.38					
817.10	40TH		32.17					
811.59	35TH		31.95					
805.67	30TH		31.72					
799.60	25TH		31.48					
793.27	20TH		31.23					
785.99	15TH		30.94					
777.37	10TH		30.60					
765.19	5TH		30.13					
756.54	3RD		29.79					
750.43	2ND		29.54					
741.89	1ST		29.21					



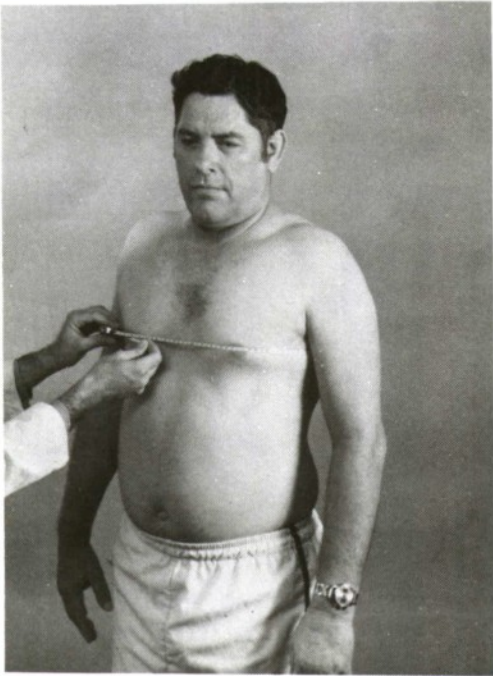
CHEST BREADTH

CHEST BREADTH: Subject stands erect with his arms initially raised to the sides and then lowered after the anthropometer is in place. The breadth of the chest is measured at the level of the nipples during normal breathing. A beam caliper is used.



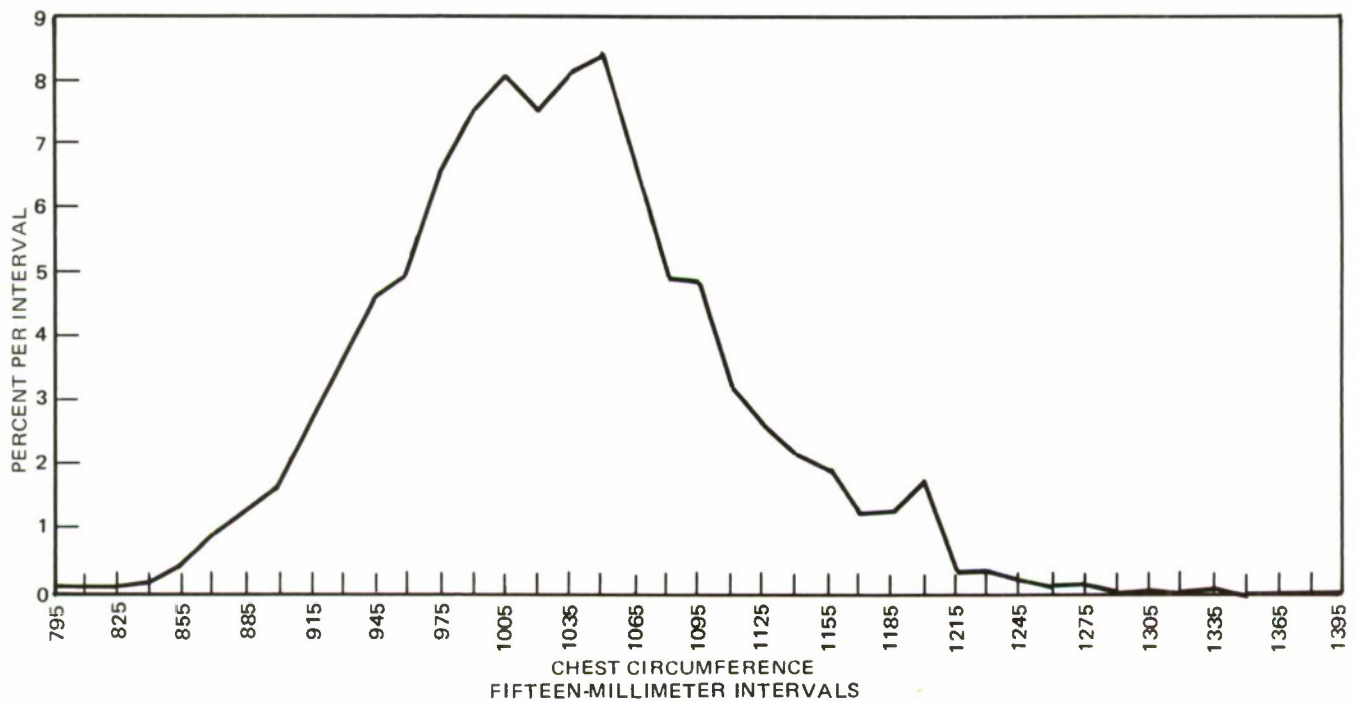
MEASUREMENT CHEST BREADTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
346.43	MEAN VALUE	13.64	480.5-485.5	1	2984	0.03	100.00
0.48	SE (MEAN)	0.02	475.5-480.5	0	2983	0.0	99.97
26.35	SD DEVIATION	1.04	470.5-475.5	1	2983	0.03	99.97
0.34	SE (SD DEV)	0.01	465.5-470.5	2	2982	0.07	99.93
			460.5-465.5	2	2980	0.07	99.97
	*****		455.5-460.5	0	2978	0.0	99.80
			450.5-455.5	0	2978	0.0	99.80
SYMMETRY --- VETA I	= 0.53		445.5-450.5	0	2978	0.0	99.80
KURTOSIS --- VETA II	= 3.97		440.5-445.5	3	2978	0.10	99.80
COEF. OF VARIATION	= 7.6%		435.5-440.5	1	2975	0.03	99.70
			430.5-435.5	4	2974	0.13	99.66
	*****		425.5-430.5	7	2970	0.23	99.53
			420.5-425.5	6	2963	0.20	99.30
NUMBER OF SUBJECTS	= 2984		415.5-420.5	7	2957	0.23	99.10
			410.5-415.5	13	2950	0.44	98.86
	*****		405.5-410.5	18	2937	0.60	98.42
			400.5-405.5	21	2919	0.70	97.82
			395.5-400.5	22	2898	0.74	97.12
			390.5-395.5	53	2876	1.78	96.38
THE PERCENTILES			385.5-390.5	71	2823	2.38	94.60
			380.5-385.5	71	2752	2.38	92.23
			375.5-380.5	81	2681	2.71	89.85
			370.5-375.5	114	2600	3.82	87.13
418.47	99TH	16.48	365.5-370.5	132	2486	4.42	83.31
406.98	98TH	16.02	360.5-365.5	178	2354	5.97	78.89
399.70	97TH	15.74	355.5-360.5	195	2176	6.53	72.92
391.61	95TH	15.42	350.5-355.5	212	1981	7.10	66.39
380.82	90TH	14.99	345.5-350.5	229	1769	7.67	59.28
372.71	85TH	14.67	340.5-345.5	250	1540	8.38	51.61
366.76	80TH	14.44	335.5-340.5	232	1290	7.77	43.23
362.24	75TH	14.26	330.5-335.5	244	1058	8.18	35.46
358.26	70TH	14.10	325.5-330.5	173	814	5.80	27.28
354.52	65TH	13.96	320.5-325.5	182	641	6.10	21.68
351.00	60TH	13.82	315.5-320.5	130	459	4.36	15.38
347.71	55TH	13.69	310.5-315.5	108	329	3.62	11.03
344.54	50TH	13.56	305.5-310.5	86	221	2.88	7.41
341.56	45TH	13.45	300.5-305.5	66	135	2.21	4.52
338.42	40TH	13.32	295.5-300.5	25	69	0.84	2.31
335.22	35TH	13.20	290.5-295.5	22	44	0.74	1.47
332.16	30TH	13.08	285.5-290.5	5	22	0.17	0.74
328.53	25TH	12.93	280.5-285.5	12	17	0.40	0.57
324.29	20TH	12.77	275.5-280.5	1	5	0.03	0.17
320.06	15TH	12.60	270.5-275.5	4	4	0.13	0.13
314.08	10TH	12.37	*MILLIMETERS				
306.33	5TH	12.06					
302.05	3RD	11.89					
298.64	2ND	11.76					
292.28	1ST	11.51					



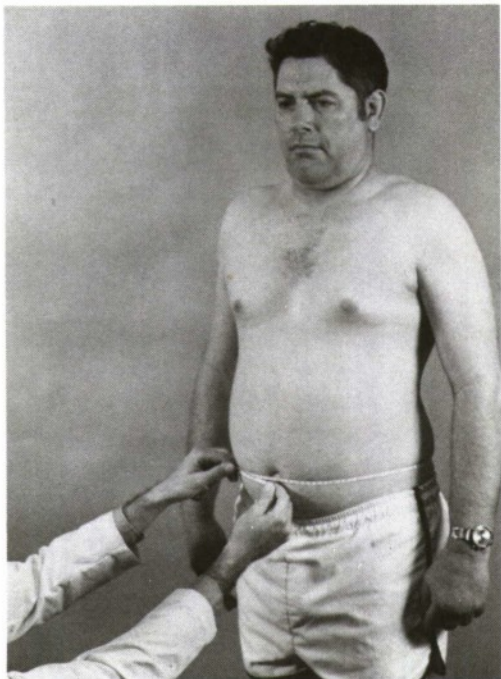
CHEST CIRCUMFERENCE

CHEST CIRCUMFERENCE: Subject stands erect with his arms initially raised to the sides and then lowered after the tape is in place. The maximum horizontal circumference of the chest is measured at the level of the nipples during normal breathing. A steel tape is used.



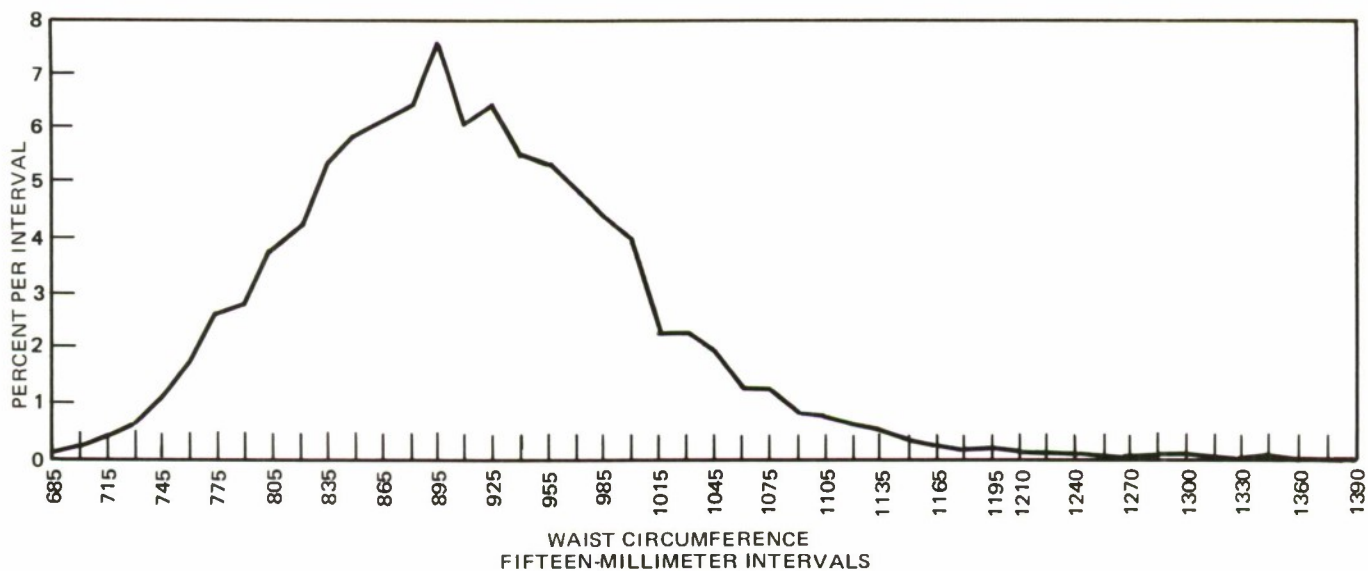
MEASUREMENT CHEST CIRCUMFERENCE

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPT
1021.56	MEAN VALUE	40.22	1380.5-1395.5	1	2990	0.03	100.00
1.44	SE (MEAN)	0.06	1365.5-1380.5	2	2989	0.07	99.97
78.99	SD DEVIATION	3.11	1350.5-1365.5	1	2987	0.03	99.90
1.02	SE (SD DEV)	0.04	1335.5-1350.5	0	2986	0.0	99.87
			1320.5-1335.5	4	2986	0.13	99.87
* * * *			1305.5-1320.5	2	2982	0.07	99.73
			1290.5-1305.5	3	2980	0.10	99.67
SYMMETRY - - - VETA I	= 0.46		1275.5-1290.5	2	2977	0.07	99.57
KURTOSIS - - - VETA II	= 3.79		1260.5-1275.5	6	2975	0.20	99.50
COEF. OF VARIATION	= 7.7%		1245.5-1260.5	2	2969	0.07	99.30
			1230.5-1245.5	9	2967	0.30	99.23
* * * *			1215.5-1230.5	13	2958	0.43	98.93
			1200.5-1215.5	12	2945	0.40	98.49
NUMBER OF SUBJECTS	= 2990		1185.5-1200.5	23	2933	0.77	98.09
			1170.5-1185.5	39	2910	1.30	97.32
* * * *			1155.5-1170.5	38	2871	1.27	96.02
			1140.5-1155.5	59	2833	1.97	94.75
			1125.5-1140.5	65	2774	2.17	92.78
			1110.5-1125.5	92	2709	3.08	90.60
THE PERCENTILES			1095.5-1110.5	99	2617	3.31	87.53
			1080.5-1095.5	144	2518	4.82	84.21
MILLIMETERS	INCHES		1065.5-1080.5	147	2374	4.92	79.40
			1050.5-1065.5	199	2227	6.66	74.48
1234.01	99TH	48.58	1035.5-1050.5	253	2028	8.46	67.83
1198.68	98TH	47.19	1020.5-1035.5	244	1775	8.16	59.36
1181.77	97TH	46.53	1005.5-1020.5	228	1531	7.63	51.20
1158.46	95TH	45.61	990.5-1005.5	241	1303	8.06	43.58
1122.57	90TH	44.20	975.5- 990.5	226	1062	7.56	35.52
1099.06	85TH	43.27	960.5- 975.5	198	836	6.62	27.96
1082.38	80TH	42.61	945.5- 960.5	149	638	4.98	21.34
1067.08	75TH	42.01	930.5- 945.5	138	489	4.62	16.35
1055.40	70TH	41.55	915.5- 930.5	108	351	3.61	11.74
1045.49	65TH	41.16	900.5- 915.5	87	243	2.91	8.13
1036.63	60TH	40.81	885.5- 900.5	64	156	2.14	5.22
1027.48	55TH	40.45	870.5- 885.5	38	92	1.27	3.08
1018.13	50TH	40.08	855.5- 870.5	28	54	0.94	1.81
1008.30	45TH	39.70	840.5- 855.5	14	26	0.47	0.87
998.84	40TH	39.32	825.5- 840.5	5	12	0.17	0.40
989.47	35TH	38.96	810.5- 825.5	3	7	0.10	0.23
979.55	30TH	38.56	795.5- 810.5	2	4	0.07	0.13
968.80	25TH	38.14	780.5- 795.5	2	2	0.07	0.07
956.47	20TH	37.66	*MILLIMETERS				
941.10	15TH	37.05					
923.28	10TH	36.35					
898.98	5TH	35.39					
884.59	3RD	34.83					
872.79	2ND	34.36					
857.59	1ST	33.76					



WAIST CIRCUMFERENCE

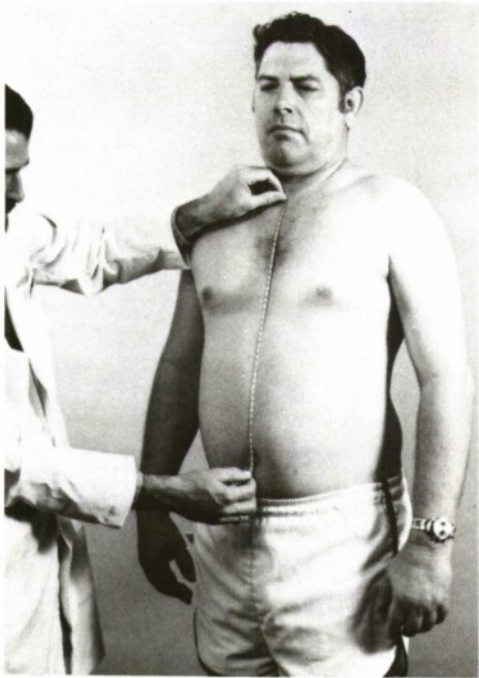
WAIST CIRCUMFERENCE: Subject stands erect with abdomen relaxed. The maximum horizontal circumference of the waist is measured at the level of the navel (omphalion). A steel tape is used.



MEASUREMENT WAIST CIRCUMFERENCE

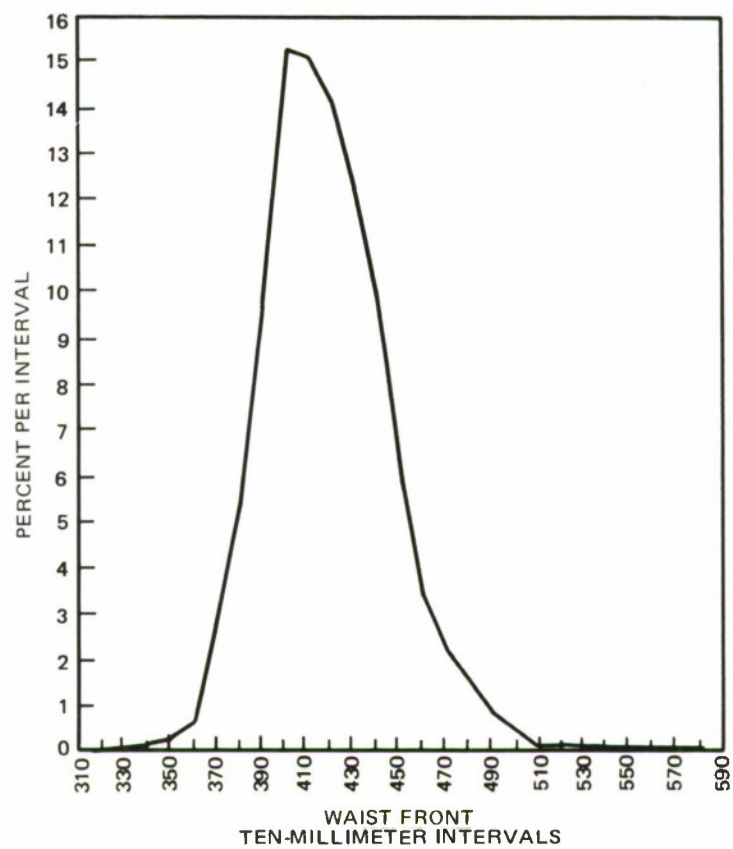
MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
906.12	MEAN VALUE	35.67	1375.5-1390.5	1	2988	0.03	100.00
1.73	SE (MEAN)	0.07	1360.5-1375.5	0	2987	0.0	99.97
94.57	SD DEVIATION	3.72	1345.5-1360.5	0	2987	0.0	99.97
1.22	SE (SD DEV)	0.05	1330.5-1345.5	2	2987	0.07	99.97
			1315.5-1330.5	0	2985	0.0	99.90
	***		1300.5-1315.5	0	2985	0.0	99.90
			1285.5-1300.5	3	2985	0.10	99.90
SYMMETRY - - - VETA I	= 0.65		1270.5-1285.5	3	2982	0.10	99.80
KURTOSIS - - - VETA II	= 3.99		1255.5-1270.5	1	2979	0.03	99.70
COEF. OF VARIATION	= 10.4%		1240.5-1255.5	1	2978	0.03	99.67
			1225.5-1240.5	3	2977	0.10	99.63
	***		1210.5-1225.5	4	2974	0.13	99.53
			1195.5-1210.5	4	2970	0.13	99.40
NUMBER OF SUBJECTS	= 2988		1180.5-1195.5	9	2960	0.30	99.26
			1165.5-1180.5	5	2957	0.17	98.96
	***		1150.5-1165.5	9	2952	0.30	98.79
			1135.5-1150.5	11	2943	0.37	98.49
			1120.5-1135.5	17	2932	0.57	98.13
			1105.5-1120.5	20	2915	0.67	97.56
THE PERCENTILES			1090.5-1105.5	25	2895	0.84	96.89
			1075.5-1090.5	26	2870	0.87	96.05
			1060.5-1075.5	40	2844	1.34	95.18
			1045.5-1060.5	38	2804	1.27	93.84
1182.38	99TH	46.55	1030.5-1045.5	59	2766	1.97	92.57
1132.19	98TH	44.57	1015.5-1030.5	69	2707	2.31	90.60
1108.02	97TH	43.62	1000.5-1015.5	69	2638	2.31	88.29
1073.48	95TH	42.26	985.5-1000.5	119	2569	3.98	85.98
1026.63	90TH	40.42	970.5- 985.5	132	2450	4.42	81.99
996.82	85TH	39.24	955.5- 970.5	148	2318	4.95	77.58
978.73	80TH	38.53	940.5- 955.5	159	2170	5.32	72.62
962.70	75TH	37.90	925.5- 940.5	164	2011	5.49	67.30
948.10	70TH	37.33	910.5- 925.5	193	1847	6.46	61.81
934.21	65TH	36.78	895.5- 910.5	186	1654	6.22	55.35
921.69	60TH	36.27	880.5- 895.5	225	1468	7.53	49.13
909.65	55TH	35.81	865.5- 880.5	193	1243	6.46	41.60
897.60	50TH	35.34	850.5- 865.5	182	1050	6.09	35.14
887.27	45TH	34.93	835.5- 850.5	176	868	4.89	29.05
876.78	40TH	34.52	820.5- 835.5	162	692	5.42	23.16
865.15	35TH	34.06	805.5- 820.5	125	530	4.18	17.74
852.84	30TH	33.58	790.5- 805.5	117	405	3.92	13.55
840.19	25TH	33.08	775.5- 790.5	85	288	2.84	9.64
826.76	20TH	32.55	760.5- 775.5	78	203	2.61	6.79
810.68	15TH	31.92	745.5- 760.5	52	125	1.74	4.18
791.88	10TH	31.18	730.5- 745.5	33	73	1.10	2.44
765.19	5TH	30.13	715.5- 730.5	20	40	0.67	1.34
750.30	3RD	29.54	700.5- 715.5	12	20	0.40	0.67
739.48	2ND	29.11	685.5- 700.5	5	8	0.17	0.27
722.91	1ST	28.46	670.5- 685.5	3	3	0.10	0.10

*MILLIMETERS



WAIST FRONT

WAIST FRONT: Subject stands erect looking straight ahead. The surface distance from the suprasternal landmark to the navel (omphalion) is measured. A steel tape is used.



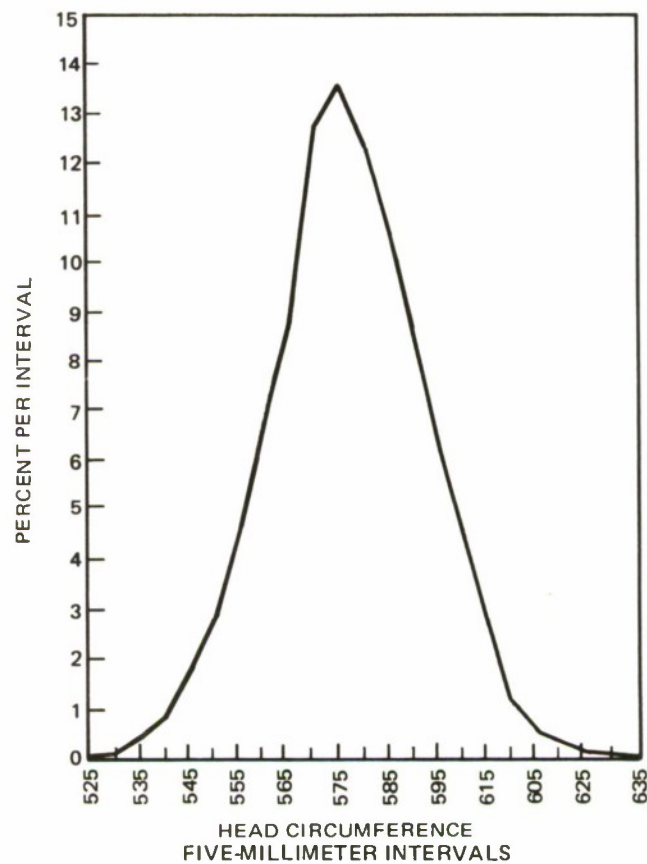
MEASUREMENT WAIST FRONT

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
413.28	MEAN VALUE	16.27	580.5-590.5	1	2983	0.03	100.00
0.49	SE (MEAN)	0.02	570.5-580.5	0	2982	0.0	99.97
26.91	SD DEVIATION	1.06	560.5-570.5	0	2982	0.0	99.97
0.35	SE (SD DEV)	0.01	550.5-560.5	0	2982	0.0	99.97
			540.5-550.5	0	2982	0.0	99.97
* * * *			530.5-540.5	1	2982	0.03	99.97
			520.5-530.5	2	2981	0.07	99.93
SYMMETRY - - - VETA I		= 0.58	510.5-520.5	5	2979	0.17	99.87
KURTOSIS - - - VETA II		= 4.24	500.5-510.5	2	2974	0.07	99.70
COEF. OF VARIATION		= 6.5%	490.5-500.5	14	2972	0.47	99.63
			480.5-490.5	24	2958	0.80	99.16
* * * *			470.5-480.5	45	2934	1.51	98.36
			460.5-470.5	62	2889	2.08	96.85
NUMBER OF SUBJECTS		= 2983	450.5-460.5	102	2827	3.42	94.77
			440.5-450.5	174	2725	5.83	91.35
* * * *			430.5-440.5	296	2551	9.92	85.52
			420.5-430.5	366	2255	12.27	75.60
			410.5-420.5	420	1889	14.08	63.33
			400.5-410.5	453	1469	15.19	49.25
THE PERCENTILES			390.5-400.5	456	1016	15.29	34.06
			380.5-390.5	289	560	9.69	18.77
MILLIMETERS		INCHES	370.5-380.5	162	271	5.43	9.08
			360.5-370.5	78	109	2.61	3.65
488.49	99TH	19.23	350.5-360.5	17	31	0.57	1.04
478.13	98TH	18.82	340.5-350.5	11	14	0.37	0.47
471.50	97TH	18.56	330.5-340.5	2	3	0.07	0.10
461.60	95TH	18.17	320.5-330.5	0	1	0.0	0.03
448.18	90TH	17.64	310.5-320.5	0	1	0.0	0.03
439.98	85TH	17.32	300.5-310.5	1	1	0.03	0.03
434.94	80TH	17.12	*MILLIMETERS				
430.01	75TH	16.93					
425.94	70TH	16.77					
421.86	65TH	16.61					
418.14	60TH	16.46					
414.59	55TH	16.32					
411.04	50TH	16.18					
407.70	45TH	16.05					
404.41	40TH	15.92					
401.12	35TH	15.79					
397.84	30TH	15.66					
394.57	25TH	15.53					
391.30	20TH	15.41					
386.61	15TH	15.22					
381.44	10TH	15.02					
372.98	5TH	14.68					
368.00	3RD	14.49					
364.17	2ND	14.34					
359.81	1ST	14.17					



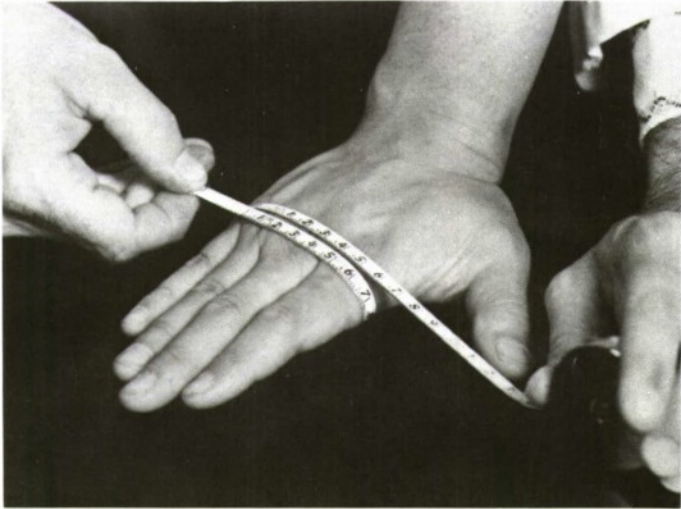
HEAD CIRCUMFERENCE

HEAD CIRCUMFERENCE: Subject sits erect with head level. The maximum circumference of the head is measured with the tape passing just above the bony brow ridges of the forehead and above both ears. A steel tape is used.



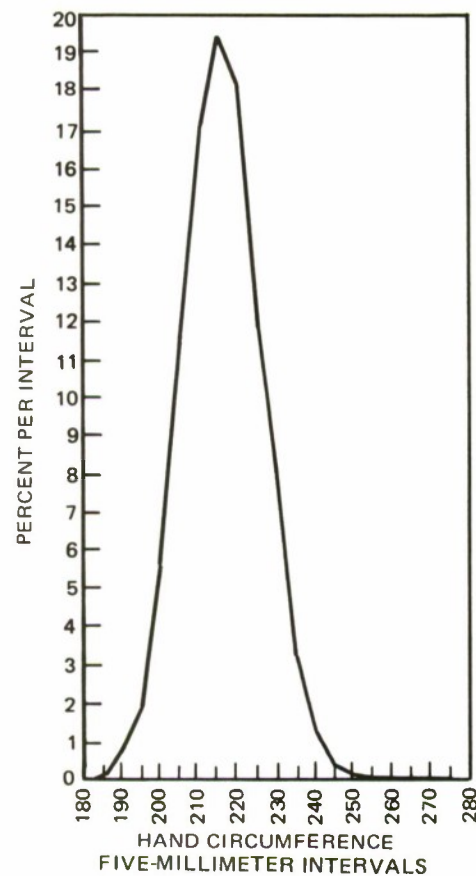
MEASUREMENT HEAD CIRCUMFERENCE

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
574.96	MEAN VALUE	22.64	630.5-635.5	1	2985	0.03	100.00
0.29	SE (MEAN)	0.01	625.5-630.5	4	2984	0.13	99.97
15.77	SD DEVIATION	0.62	620.5-625.5	5	2980	0.17	99.83
0.20	SE (SD DEV)	0.01	615.5-620.5	13	2975	0.44	99.66
			610.5-615.5	19	2962	0.64	99.23
* * * * *			605.5-610.5	34	2943	1.14	98.59
			600.5-605.5	78	2909	2.61	97.45
SYMMETRY - - - VETA I		= 0.07	595.5-600.5	132	2831	4.42	94.84
KURTOSIS - - - VETA II		= 3.13	590.5-595.5	182	2699	6.10	90.42
COEF. OF VARIATION		= 2.7%	585.5-590.5	257	2517	8.61	84.32
			580.5-585.5	316	2260	10.59	75.71
* * * * *			575.5-580.5	367	1944	12.29	65.13
			570.5-575.5	403	1577	13.50	52.83
NUMBER OF SUBJECTS		= 2985	565.5-570.5	381	1174	12.76	39.33
			560.5-565.5	263	793	8.81	26.57
* * * * *			555.5-560.5	209	530	7.00	17.76
			550.5-555.5	137	321	4.59	10.75
			545.5-550.5	85	184	2.85	6.16
			540.5-545.5	54	99	1.81	3.32
THE PERCENTILES			535.5-540.5	26	45	0.87	1.51
			530.5-535.5	15	19	0.50	0.64
MILLIMETERS		INCHES	525.5-530.5	3	4	0.10	0.13
			520.5-525.5	1	1	0.03	0.03
				*MILLIMETERS			
613.70	99TH	24.16					
607.90	98TH	23.93					
604.63	97TH	23.80					
600.80	95TH	23.65					
595.16	90TH	23.43					
591.06	85TH	23.27					
587.99	80TH	23.15					
585.16	75TH	23.04					
582.80	70TH	22.94					
580.45	65TH	22.85					
578.42	60TH	22.77					
576.38	55TH	22.69					
574.45	50TH	22.62					
572.60	45TH	22.54					
570.75	40TH	22.47					
568.80	35TH	22.39					
566.84	30TH	22.32					
564.61	25TH	22.23					
561.77	20TH	22.12					
558.53	15TH	21.99					
554.68	10TH	21.84					
548.46	5TH	21.59					
544.62	3RD	21.44					
541.86	2ND	21.33					
537.59	1ST	21.16					



HAND CIRCUMFERENCE

HAND CIRCUMFERENCE: Subject sits with his right hand and fingers extended palm down, resting on, but not pressed against, the measuring bench. The fingers are together. The maximum circumference of the hand is measured at the level of the distal ends of the metacarpal bones. A steel tape is used.



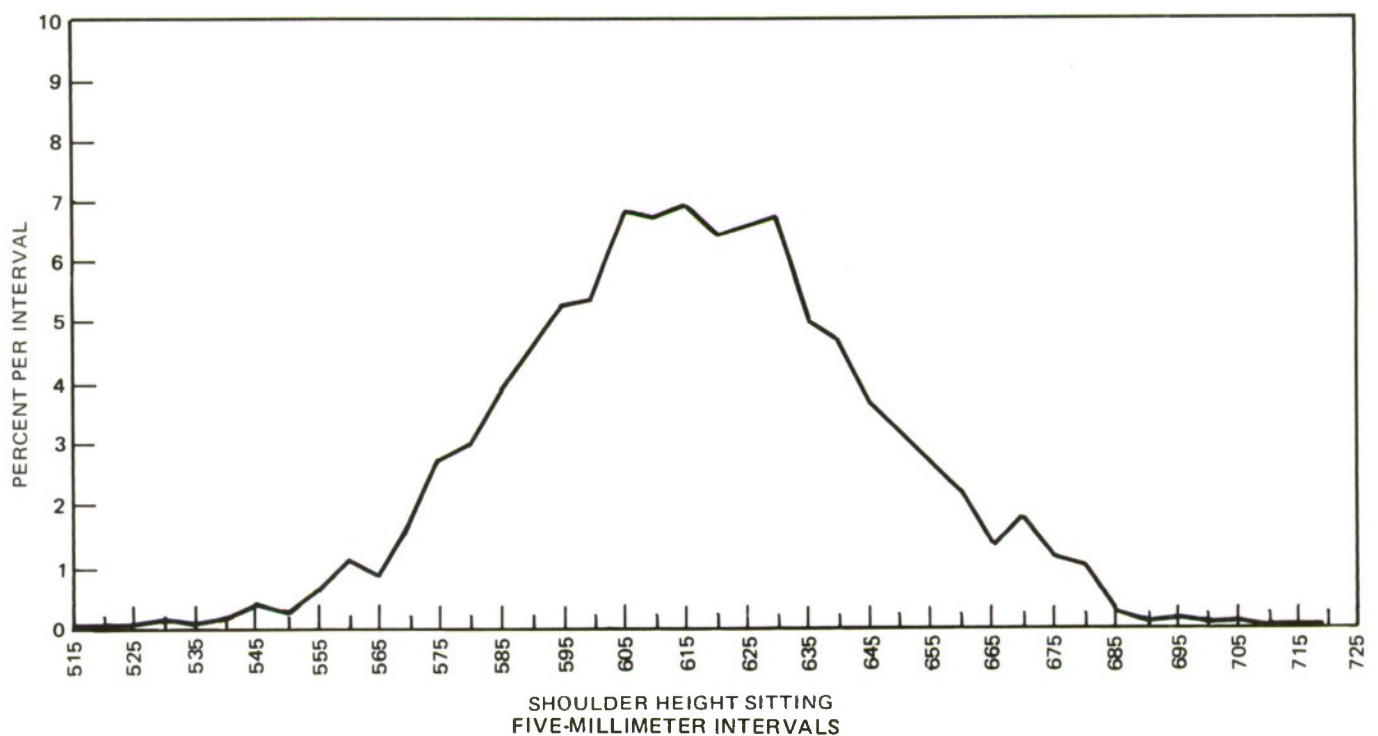
MEASUREMENT HAND CIRCUMFERENCE

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
214.27	MEAN VALUE	8.44	275.5-280.5	1	2985	0.03	100.00
0.19	SE (MEAN)	0.01	270.5-275.5	0	2984	0.0	99.97
10.21	SD DEVIATION	0.40	265.5-270.5	0	2984	0.0	99.97
0.13	SE (SD DEV)	0.01	260.5-265.5	0	2984	0.0	99.97
			255.5-260.5	0	2984	0.0	99.97
	*****		250.5-255.5	0	2984	0.0	99.97
			245.5-250.5	6	2984	0.20	99.97
SYMMETRY - - - VETA I	= 0.19		240.5-245.5	13	2978	0.44	99.77
KURTOSIS - - - VETA II	= 3.51		235.5-240.5	41	2965	1.37	99.33
COEF. OF VARIATION	= 4.8%		230.5-235.5	101	2924	3.38	97.96
			225.5-230.5	240	2823	8.04	94.57
	*****		220.5-225.5	358	2583	11.99	86.53
			215.5-220.5	539	2225	18.06	74.54
NUMBER OF SUBJECTS	= 2985		210.5-215.5	579	1686	19.40	56.48
			205.5-210.5	510	1107	17.09	37.09
	*****		200.5-205.5	343	597	11.49	20.00
			195.5-200.5	165	254	5.53	8.51
			190.5-195.5	58	89	1.94	2.98
			185.5-190.5	25	31	0.84	1.04
THE PERCENTILES			180.5-185.5	5	6	0.17	0.20
			175.5-180.5	1	1	0.03	0.03
MILLIMETERS		INCHES	*MILLIMETERS				
239.30	99TH	9.42					
235.66	98TH	9.28					
234.09	97TH	9.22					
231.13	95TH	9.10					
227.66	90TH	8.96					
224.86	85TH	8.85					
222.78	80TH	8.77					
220.69	75TH	8.69					
219.24	70TH	8.63					
217.86	65TH	8.58					
216.47	60TH	8.52					
215.12	55TH	8.47					
213.83	50TH	8.42					
212.54	45TH	8.37					
211.25	40TH	8.32					
209.89	35TH	8.26					
208.43	30TH	8.21					
206.96	25TH	8.15					
205.50	20TH	8.09					
203.32	15TH	8.00					
201.15	10TH	7.92					
197.33	5TH	7.77					
195.52	3RD	7.70					
192.97	2ND	7.60					
190.27	1ST	7.49					



SHOULDER HEIGHT, SITTING

SHOULDER HEIGHT, SITTING: Subject sits erect with his feet resting on a surface adjusted so that his knees are bent at right angles. The vertical distance from the sitting surface to the right acromion is measured. An anthropometer is used.



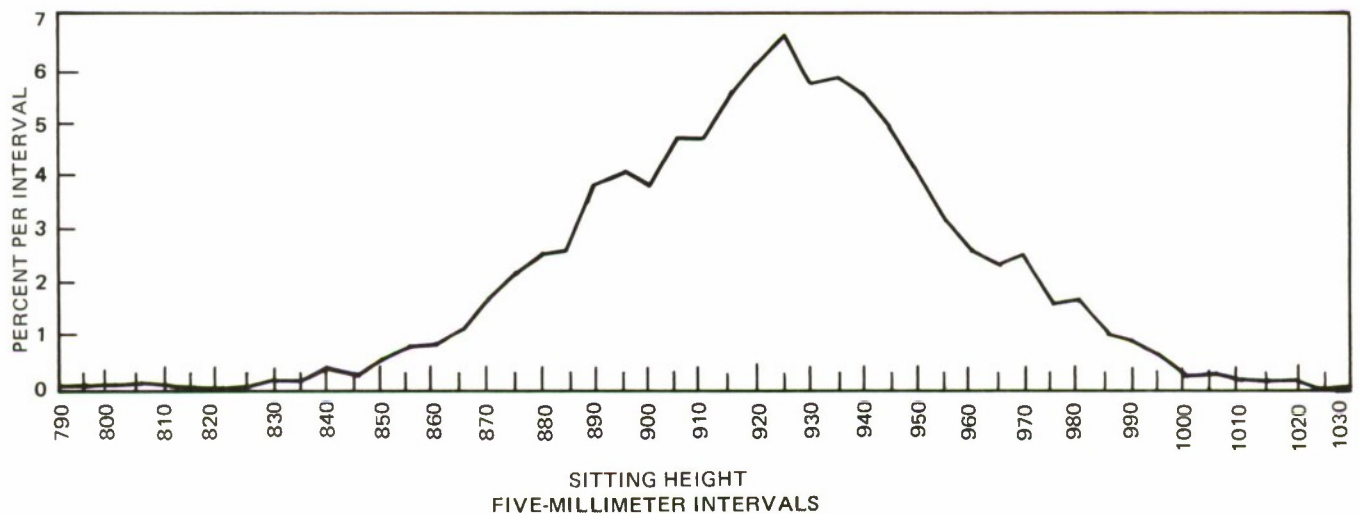
MEASUREMENT SHOULDER HEIGHT SITTING

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
615.19	MEAN VALUE	24.22	715.5-720.5	3	2988	0.10	100.00
0.54	SE (MEAN)	0.02	710.5-715.5	1	2985	0.03	99.90
29.67	SD DEVIATION	1.17	705.5-710.5	2	2984	0.07	99.87
0.38	SE (SD DEV)	0.02	700.5-705.5	5	2982	0.17	99.80
* * * * *			695.5-700.5	6	2977	0.20	99.63
			690.5-695.5	8	2971	0.27	99.43
			685.5-690.5	3	2963	0.10	99.16
SYMMETRY - - - VETA I		= 0.09	680.5-685.5	10	2960	0.33	99.06
KURTOSIS - - - VETA II		= 3.13	675.5-680.5	32	2950	1.07	98.73
COEF. OF VARIATION		= 4.8%	670.5-675.5	36	2918	1.20	97.66
* * * * *			665.5-670.5	54	2882	1.81	96.45
			660.5-665.5	55	2828	1.47	94.65
			655.5-660.5	70	2784	2.34	93.17
NUMBER OF SUBJECTS		= 2988	650.5-655.5	84	2714	2.81	90.83
* * * * *			645.5-650.5	96	2630	3.21	88.02
			640.5-645.5	111	2534	3.71	84.81
			635.5-640.5	142	2423	4.75	81.09
			630.5-635.5	150	2281	5.02	76.34
			625.5-630.5	203	2131	6.79	71.32
			620.5-625.5	197	1928	6.59	64.52
			615.5-620.5	194	1731	6.49	57.93
			610.5-615.5	207	1537	6.93	51.44
			605.5-610.5	201	1330	6.73	44.51
			600.5-605.5	206	1129	6.89	37.78
684.56	99TH	26.95	595.5-600.5	162	923	5.42	30.89
677.10	98TH	26.66	590.5-595.5	160	761	5.35	25.47
672.77	97TH	26.49	585.5-590.5	135	601	4.52	20.11
666.48	95TH	26.24	580.5-585.5	117	466	3.92	15.60
654.02	90TH	25.75	575.5-580.5	90	349	3.01	11.68
645.80	85TH	25.43	570.5-575.5	84	259	2.81	8.67
639.35	80TH	25.17	565.5-570.5	52	175	1.74	5.86
634.17	75TH	24.97	560.5-565.5	29	123	0.97	4.12
629.53	70TH	24.78	555.5-560.5	34	94	1.14	3.15
625.85	65TH	24.64	550.5-555.5	19	60	0.64	2.01
622.07	60TH	24.49	545.5-550.5	10	41	0.33	1.37
618.24	55TH	24.34	540.5-545.5	12	31	0.40	1.04
614.46	50TH	24.19	535.5-540.5	7	19	0.23	0.64
610.85	45TH	24.05	530.5-535.5	2	12	0.07	0.40
607.15	40TH	23.90	525.5-530.5	5	10	0.17	0.33
603.48	35TH	23.76	520.5-525.5	2	5	0.07	0.17
599.68	30TH	23.61	515.5-520.5	2	3	0.07	0.10
595.06	25TH	23.43	510.5-515.5	1	1	0.03	0.03
590.37	20TH	23.24	*MILLIMETERS				
584.74	15TH	23.02					
577.71	10TH	22.74					
568.04	5TH	22.36					
559.86	3RD	22.04					
555.44	2ND	21.87					
545.03	1ST	21.46					



SITTING HEIGHT

SITTING HEIGHT: Subject sits erect with head level and with feet resting on a surface adjusted so that his knees are bent at right angles. With the anthropometer arm firmly touching the scalp to compress the hair, the vertical distance from the sitting surface to the top of the head is measured. An anthropometer is used.



MEASUREMENT SITTING HEIGHT

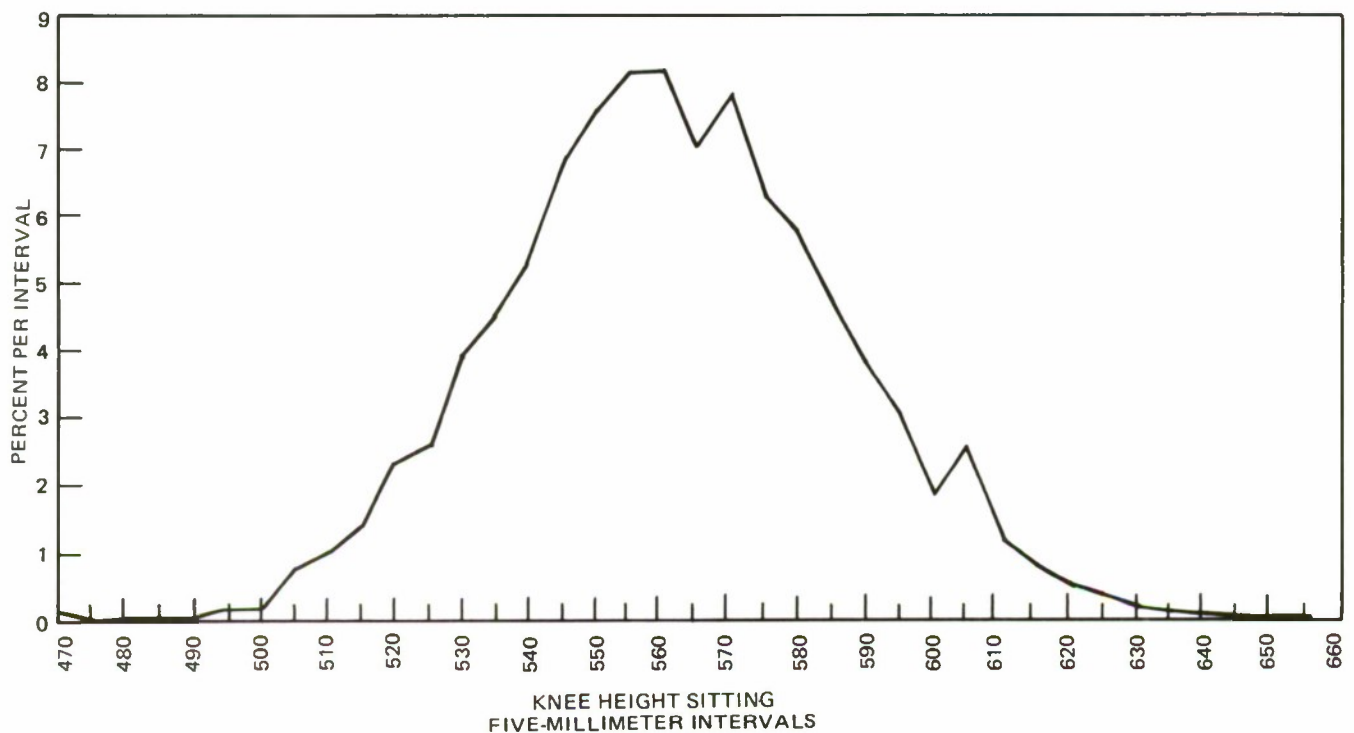
MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
921.80	MEAN VALUE	36.29	1025.5-1030.5	2	2984	0.07	100.00
0.63	SE (MEAN)	0.02	1020.5-1025.5	1	2982	0.03	99.93
34.45	SD DEVIATION	1.36	1015.5-1020.5	8	2981	0.27	99.90
0.45	SE (SD DEV)	0.02	1010.5-1015.5	6	2973	0.20	99.63
			1005.5-1010.5	7	2967	0.23	99.43
			1000.5-1005.5	11	2960	0.37	99.20
			995.5-1000.5	10	2949	0.34	98.83
SYMMETRY - - - VETA I	= 0.08		990.5- 995.5	22	2939	0.74	98.49
KURTOSIS - - - VETA II	= 3.17		985.5- 990.5	30	2917	1.01	97.75
COEF. OF VARIATION	= 3.7%		980.5- 985.5	32	2887	1.07	96.75
			975.5- 980.5	53	2855	1.78	95.68
			970.5- 975.5	49	2802	1.64	93.90
			965.5- 970.5	76	2753	2.55	92.26
NUMBER OF SUBJECTS	= 2984		960.5- 965.5	74	2677	2.48	89.71
			955.5- 960.5	93	2603	3.12	87.23
			950.5- 955.5	101	2510	3.38	84.12
			945.5- 950.5	127	2409	4.26	80.73
			940.5- 945.5	149	2282	4.99	76.47
			935.5- 940.5	165	2133	5.53	71.48
			930.5- 935.5	177	1968	5.93	65.95
			925.5- 930.5	174	1791	5.83	60.02
			920.5- 925.5	199	1617	6.67	54.19
			915.5- 920.5	186	1418	6.23	47.52
			910.5- 915.5	168	1232	5.63	41.29
			905.5- 910.5	141	1064	4.73	35.66
			900.5- 905.5	140	923	4.69	30.93
			895.5- 900.5	116	783	3.89	26.24
			890.5- 895.5	122	667	4.09	22.35
			885.5- 890.5	118	545	3.95	18.26
			880.5- 885.5	78	427	2.61	14.31
			875.5- 880.5	76	349	2.55	11.70
			870.5- 875.5	69	273	2.31	9.15
			865.5- 870.5	53	204	1.78	6.84
			860.5- 865.5	36	151	1.21	5.06
			855.5- 860.5	26	115	0.87	3.85
			850.5- 855.5	24	89	0.80	2.98
			845.5- 850.5	17	65	0.57	2.18
			840.5- 845.5	11	48	0.37	1.61
			835.5- 840.4	14	37	0.47	1.24
			830.5- 835.5	7	23	0.23	0.77
			825.5- 830.5	7	16	0.23	0.54
			820.5- 825.5	1	9	0.03	0.30
			815.5- 820.5	1	8	0.03	0.27
			810.5- 815.5	1	7	0.03	0.23
			805.5- 810.5	1	6	0.03	0.20
			800.5- 805.5	2	5	0.07	0.17
			795.5- 800.5	1	3	0.03	0.10
			790.5- 795.5	1	2	0.03	0.07
			785.5- 790.5	1	1	0.03	0.03

*MILLIMETERS



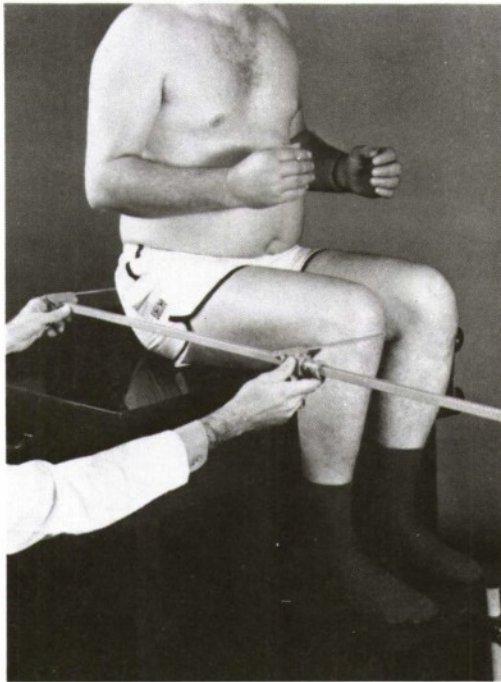
KNEE HEIGHT SITTING

KNEE HEIGHT: Subject sits erect with his feet resting on a surface adjusted so that his knees are bent at right angles. The patella of the right knee has been marked beforehand when standing. Knee height is measured as the vertical distance from the footrest surface to the top of the right knee. An anthropometer is used.



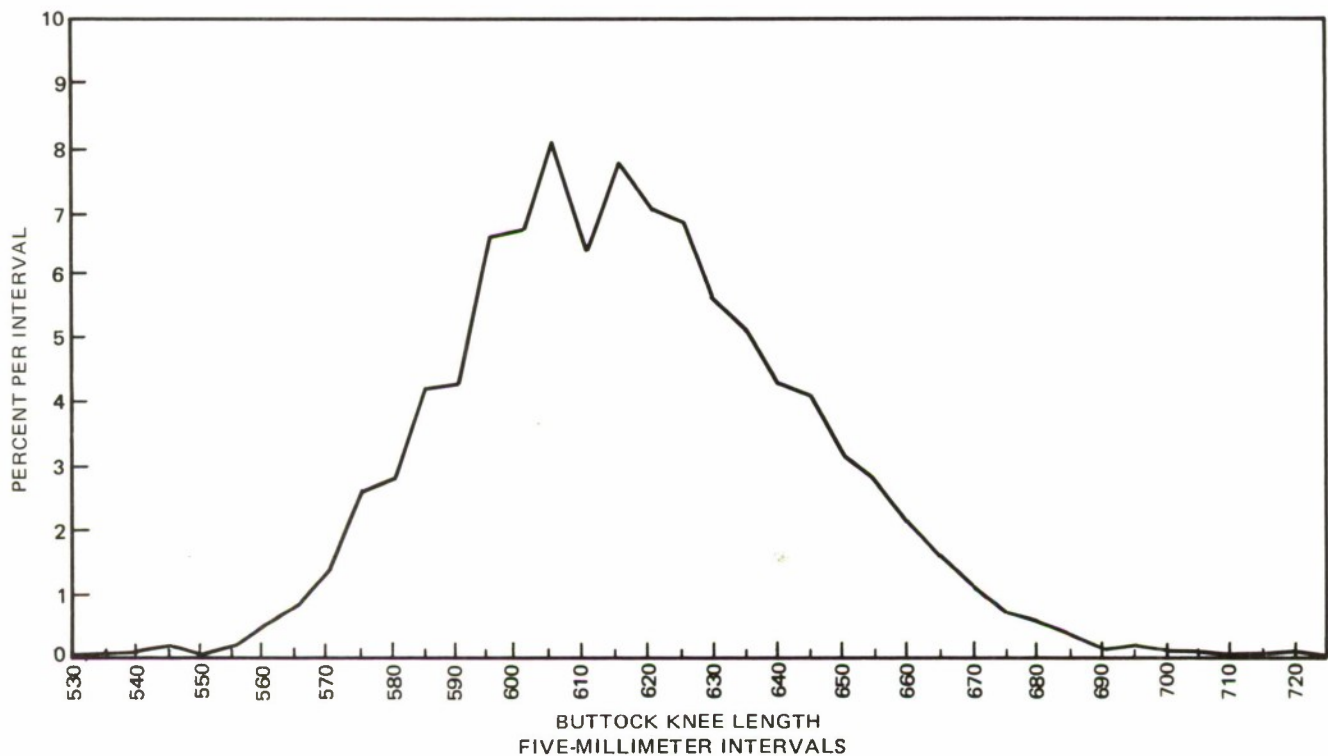
MEASUREMENT KNEE HEIGHT SITTING

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
559.15	MEAN VALUE	22.01	650.5-655.5	1	2984	0.03	100.00
0.46	SE (MEAN)	0.02	645.5-650.5	1	2983	0.03	99.97
25.26	SD DEVIATION	0.99	640.5-645.5	1	2982	0.03	99.93
0.33	SE (SD DEV)	0.01	635.5-640.5	4	2981	0.13	99.90
			630.5-635.5	5	2977	0.17	99.77
	* * * * *		625.5-630.5	7	2972	0.23	99.60
			620.5-625.5	13	2965	0.44	99.36
SYMMETRY - - - VETA I	= 0.13		615.5-620.5	16	2952	0.54	98.93
KURTOSIS - - - VETA II	= 3.09		610.5-615.5	24	2936	0.80	98.39
COEF. OF VARIATION	= 4.5%		605.5-610.5	37	2912	1.24	97.59
			600.5-605.5	61	2875	2.04	96.35
	* * * * *		595.5-600.5	58	2814	1.94	94.30
			590.5-595.5	91	2756	3.05	92.36
NUMBER OF SUBJECTS	= 2984		585.5-590.5	116	2665	3.89	89.31
			580.5-585.5	143	2549	4.79	85.42
	* * * * *		575.5-580.5	174	2406	5.83	80.63
			570.5-575.5	188	2232	6.30	74.80
			565.5-570.5	233	2044	7.81	68.50
			560.5-565.5	211	1811	7.07	60.69
THE PERCENTILES			555.5-560.5	244	1600	8.18	53.62
			550.5-555.5	244	1356	8.18	45.44
MILLIMETERS	INCHES		545.5-550.5	227	1112	7.61	37.27
			540.5-545.5	208	885	6.97	29.66
621.33	99TH	24.46	535.5-540.5	158	677	5.29	22.69
613.07	98TH	24.14	530.5-535.5	135	519	4.52	17.39
608.13	97TH	23.94	525.5-530.5	119	384	3.99	12.87
602.21	95TH	23.71	520.5-525.5	77	265	2.58	8.88
591.63	90TH	23.29	515.5-520.5	73	188	2.45	6.30
585.06	85TH	23.03	510.5-515.5	44	115	1.47	3.85
579.96	80TH	22.83	505.5-510.5	30	71	1.01	2.38
575.67	75TH	22.66	500.5-505.5	24	24	0.80	1.37
571.69	70TH	22.51	495.5-500.5	6	17	0.20	0.57
568.26	65TH	22.37	490.5-495.5	6	11	0.20	0.37
565.01	60TH	22.24	485.5-490.5	1	5	0.03	0.17
561.48	55TH	22.11	480.5-485.5	1	4	0.03	0.13
558.29	50TH	21.98	475.5-480.5	1	3	0.03	0.10
555.23	45TH	21.86	470.5-475.5	0	2	0.0	0.07
552.17	40TH	21.74	465.5-470.5	2	2	0.07	0.07
549.01	35TH	21.61	*MILLIMETERS				
545.72	30TH	21.49					
542.16	25TH	21.34					
537.96	20TH	21.18					
532.86	15TH	20.98					
526.90	10TH	20.74					
517.84	5TH	20.39					
512.60	3RD	20.18					
508.61	2ND	20.02					
503.17	1ST	19.81					



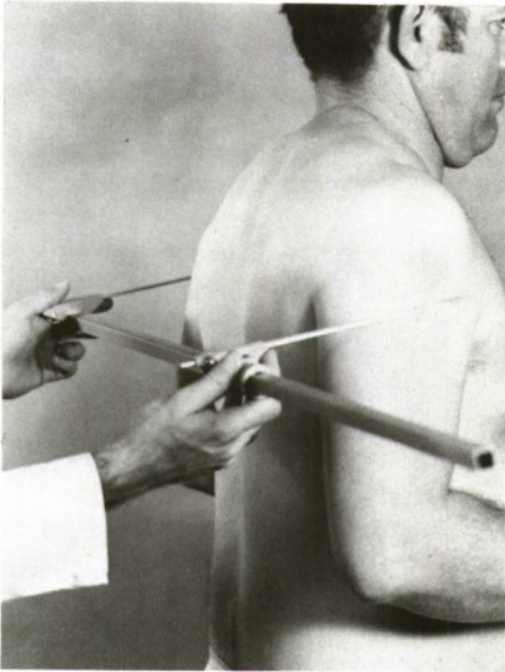
BUTTOCK-KNEE LENGTH

BUTTOCK-KNEE LENGTH: Subject sits erect with his feet resting on a surface adjusted so that his knees are bent at right angles. Buttock-knee length is measured as the distance from the back of the right buttock to the front of the right knee. A beam caliper is used.



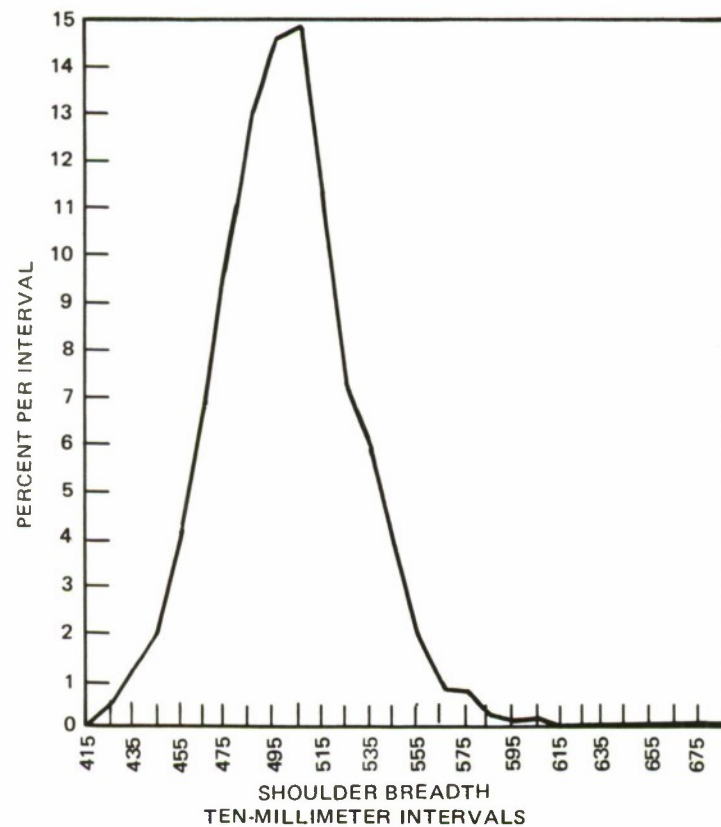
MEASUREMENT BUTTOCK KNEE LENGTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
615.03	MEAN VALUE	24.21	720.5-725.5	1	2988	0.03	100.00
0.50	SE (MEAN)	0.02	715.5-720.5	2	2987	0.07	99.97
27.11	SD DEVIATION	1.07	710.5-715.5	1	2985	0.03	99.90
0.35	SE (SD DEV)	0.01	705.5-710.5	1	2984	0.03	99.87
			700.5-705.5	2	2983	0.07	99.83
	*****		695.5-700.5	4	2981	0.13	99.77
			690.5-695.5	10	2977	0.33	99.63
SYMMETRY --- VETA I	= 0.32		685.5-690.5	5	2967	0.17	99.30
KURTOSIS --- VETA II	= 3.18		680.5-685.5	13	2962	0.44	99.13
COEF. OF VARIATION	= 4.4%		675.5-680.5	19	2949	0.64	98.69
			670.5-675.5	23	2930	0.77	98.06
	*****		665.5-670.5	35	2907	1.17	97.29
			660.5-665.5	49	2872	1.64	96.12
NUMBER OF SUBJECTS	= 2988		655.5-660.5	61	2823	2.04	94.48
			650.5-655.5	84	2762	2.81	92.44
	*****		645.5-650.5	96	2678	3.21	89.63
			640.5-645.5	123	2582	4.12	86.41
			635.5-640.5	129	2459	4.32	82.30
			630.5-635.5	152	2330	5.09	77.98
THE PERCENTILES			625.5-630.5	170	2178	5.69	72.89
			620.5-625.5	203	2008	6.79	67.20
MILLIMETERS		INCHES	615.5-620.5	210	1805	7.03	60.41
			610.5-615.5	231	1595	7.73	53.38
684.01	99TH	26.93	605.5-610.5	194	1364	6.49	45.65
675.12	98TH	26.58	600.5-605.5	240	1170	8.03	39.16
669.27	97TH	26.35	595.5-600.5	205	930	6.86	31.12
662.09	95TH	26.07	590.5-595.5	197	725	6.59	24.26
651.17	90TH	25.64	585.5-590.5	129	528	4.32	17.67
643.78	85TH	25.35	580.5-585.5	127	399	4.25	13.35
637.84	80TH	25.11	575.5-580.5	86	272	2.88	9.10
632.57	75TH	24.90	570.5-575.5	80	186	2.68	6.22
627.96	70TH	24.72	565.5-570.5	44	106	1.47	3.55
623.88	65TH	24.56	560.5-565.5	25	62	0.84	2.07
620.21	60TH	24.42	555.5-560.5	16	37	0.54	1.24
616.65	55TH	24.28	550.5-555.5	7	21	0.23	0.70
613.31	50TH	24.15	545.5-550.5	2	14	0.07	0.47
610.00	45TH	24.02	540.5-545.5	7	12	0.23	0.40
606.15	40TH	23.86	535.5-540.5	2	5	0.07	0.17
602.91	35TH	23.74	530.5-535.5	2	3	0.07	0.10
599.68	30TH	23.61	525.5-530.5	1	1	0.03	0.03
596.04	25TH	23.47	*MILLIMETERS				
592.27	20TH	23.32					
587.41	15TH	23.13					
581.55	10TH	22.90					
573.21	5TH	22.57					
568.64	3RD	22.39					
565.05	2ND	22.25					
558.27	1ST	21.98					



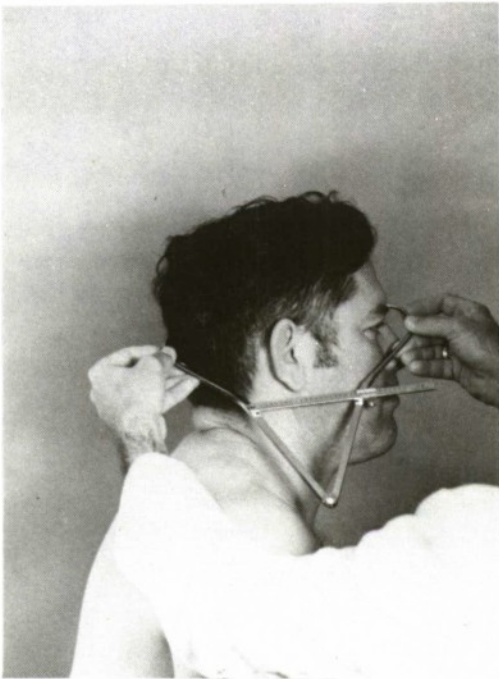
SHOULDER BREADTH

SHOULDER BREADTH: Subject sits erect with his arms bent to form right angles at the elbows and with the upper arms hanging freely. The forearms are extended straight ahead. The maximum breadth across the shoulders is measured at the level of the bulges of the deltoid muscles of the upper arms. A beam caliper is used.



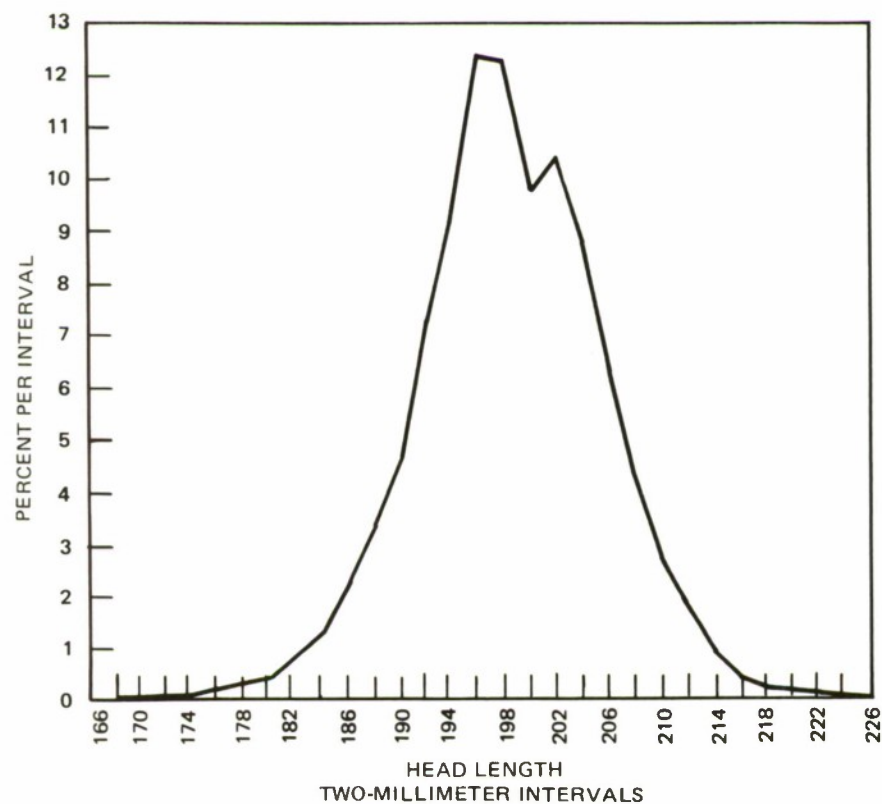
MEASUREMENT SHOULDER BREADTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
494.72	MEAN VALUE	19.48	675.5-685.5	1	2985	0.03	100.00
0.54	SE (MEAN)	0.02	665.5-675.5	0	2984	0.0	99.97
29.42	SD DEVIATION	1.16	655.5-665.5	0	2984	0.0	99.97
0.38	SE (SD DEV)	0.01	645.5-655.5	0	2984	0.0	99.97
			635.5-645.5	2	2984	0.07	99.97
	*****		625.5-635.5	0	2982	0.0	99.90
			615.5-625.5	0	2982	0.0	99.90
SYMMETRY - - - VETA I	= 0.40		605.5-615.5	0	2982	0.0	99.90
KURTOSIS - - - VETA II	= 4.23		595.5-605.5	7	2982	0.23	99.90
COEF. OF VARIATION	= 5.9%		585.5-595.5	5	2975	0.17	99.66
			575.5-585.5	11	2970	0.37	99.50
	*****		565.5-575.5	21	2959	0.70	99.13
			555.5-565.5	26	2938	0.87	98.43
NUMBER OF SUBJECTS	= 2985		545.5-555.5	59	2912	1.98	97.55
			535.5-545.5	111	2853	3.72	95.58
	*****		525.5-535.5	177	2742	5.93	91.86
			515.5-525.5	215	2565	7.20	85.93
			505.5-515.5	336	2350	11.26	78.73
			495.5-505.5	441	2014	14.77	67.47
	THE PERCENTILES		485.5-495.5	434	1573	14.54	52.70
			475.5-485.5	388	1139	13.00	38.16
			465.5-475.5	302	751	10.12	25.16
			455.5-465.5	203	449	6.80	15.04
573.67	99TH	22.59	445.5-455.5	126	246	4.22	8.24
560.62	98TH	22.07	435.5-445.5	61	120	2.04	4.02
552.70	97TH	21.76	425.5-434.5	38	59	1.27	1.98
543.95	95TH	21.42	415.5-425.5	15	21	0.50	0.70
532.36	90TH	20.96	405.5-415.5	6	6	0.20	0.20
524.21	85TH	20.64	*MILLIMETERS				
517.27	80TH	20.36					
512.19	75TH	20.16					
507.75	70TH	19.99					
503.83	65TH	19.84					
500.44	60TH	19.70					
497.06	55TH	19.57					
493.65	50TH	19.43					
490.21	45TH	19.30					
486.77	40TH	19.16					
483.07	35TH	19.02					
479.22	30TH	18.87					
475.34	25TH	18.71					
470.40	20TH	18.52					
465.44	15TH	18.32					
458.09	10TH	18.03					
447.82	5TH	17.63					
440.51	3RD	17.34					
435.61	2ND	17.15					
427.83	1ST	16.84					



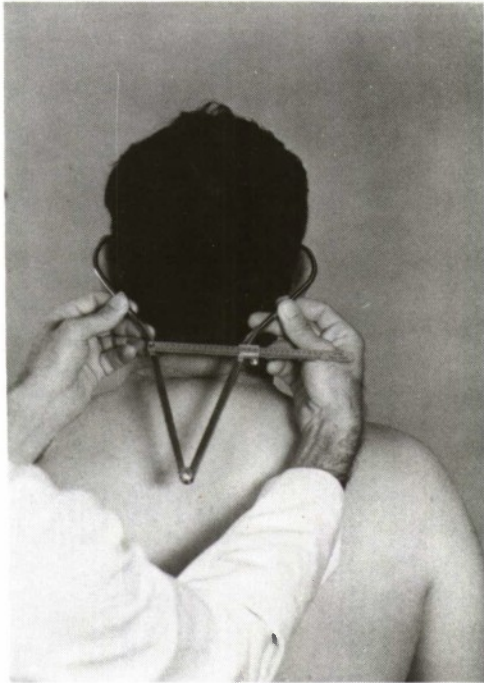
HEAD LENGTH

HEAD LENGTH: Subject sits erect with head level. The maximum length of the head is measured from the back of the head (occiput) to the forehead (glabella). Spreading calipers are used.



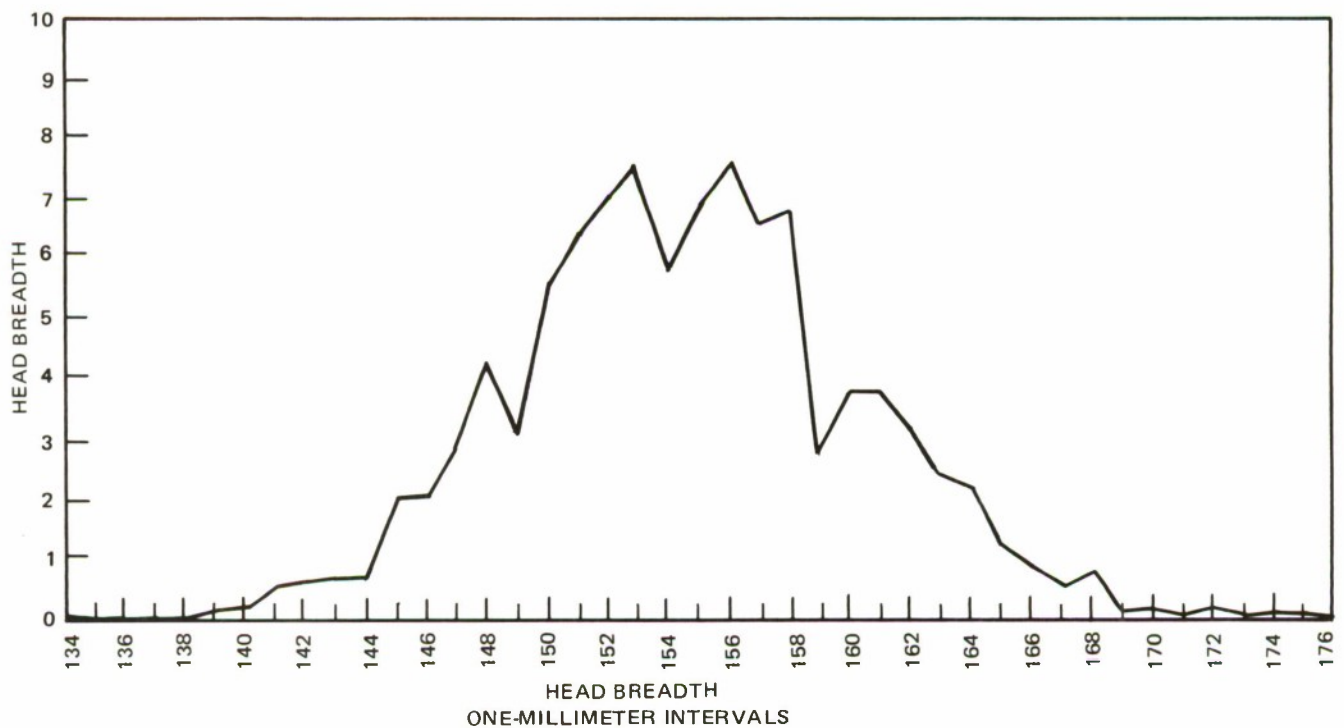
MEASUREMENT HEAD LENGTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
198.03	MEAN VALUE	7.80	224.5-226.5	1	2992	0.03	100.00
0.13	SE (MEAN)	0.01	222.5-224.5	1	2991	0.03	99.97
6.97	SD DEVIATION	0.27	220.5-222.5	2	2990	0.07	99.93
0.09	SE (SD DEV)	0.00	218.5-220.5	6	2988	0.20	99.87
* * * * *			216.5-218.5	7	2982	0.23	99.67
			214.5-216.5	11	2975	0.37	99.43
			212.5-214.5	26	2964	0.87	99.06
SYMMETRY - - - VETA I	=	-0.02	210.5-212.5	56	2938	1.87	98.20
KURTOSIS - - - VETA II	=	3.38	208.5-210.5	80	2882	2.67	96.32
COEF. OF VARIATION	=	3.5%	206.5-208.5	129	2802	4.31	93.65
* * * * *			204.5-206.5	187	2673	6.25	89.34
			202.5-204.5	262	2486	8.76	83.09
			200.5-202.5	313	2224	10.46	74.33
NUMBER OF SUBJECTS	=	2992	198.5-200.5	291	1911	9.73	63.87
* * * * *			196.5-198.5	367	1620	12.27	54.14
			194.5-196.5	370	1253	12.37	41.88
			192.5-194.5	274	883	9.16	29.51
THE PERCENTILES			190.5-192.5	221	609	7.39	20.35
MILLIMETERS		INCHES	188.5-190.5	136	388	4.55	12.97
214.35	99TH	8.44	186.5-188.5	97	252	3.24	8.42
212.29	98TH	8.36	184.5-186.5	68	155	2.27	5.18
211.22	97TH	8.32	182.5-184.5	40	87	1.34	2.91
209.51	95TH	8.25	180.5-182.5	24	47	0.80	1.57
206.81	90TH	8.14	178.5-180.5	11	23	0.37	0.77
205.11	95TH	8.08	176.5-178.5	8	12	0.27	0.40
203.79	80TH	8.02	174.5-176.5	3	4	0.10	0.13
202.65	75TH	7.98	172.5-174.5	0	1	0.0	0.03
201.67	70TH	7.94	170.5-172.5	0	1	0.0	0.03
200.72	65TH	7.90	168.5-170.5	0	1	0.0	0.03
199.70	60TH	7.86	166.5-168.5	0	1	0.0	0.03
198.68	55TH	7.82	164.5-166.5	1	1	0.03	0.03
197.82	50TH	7.79	*MILLIMETERS				
197.01	45TH	7.76					
196.20	40TH	7.72					
195.39	35TH	7.69					
194.58	30TH	7.66					
193.51	25TH	7.62					
192.40	20TH	7.57					
191.05	15TH	7.52					
189.19	10TH	7.45					
186.34	5TH	7.34					
184.58	3RD	7.27					
183.14	2ND	7.21					
181.08	1ST	7.13					



HEAD BREADTH

HEAD BREADTH: Subject sits erect with head level. The maximum horizontal breadth of the head is measured above and behind the ears. Spreading calipers are used.



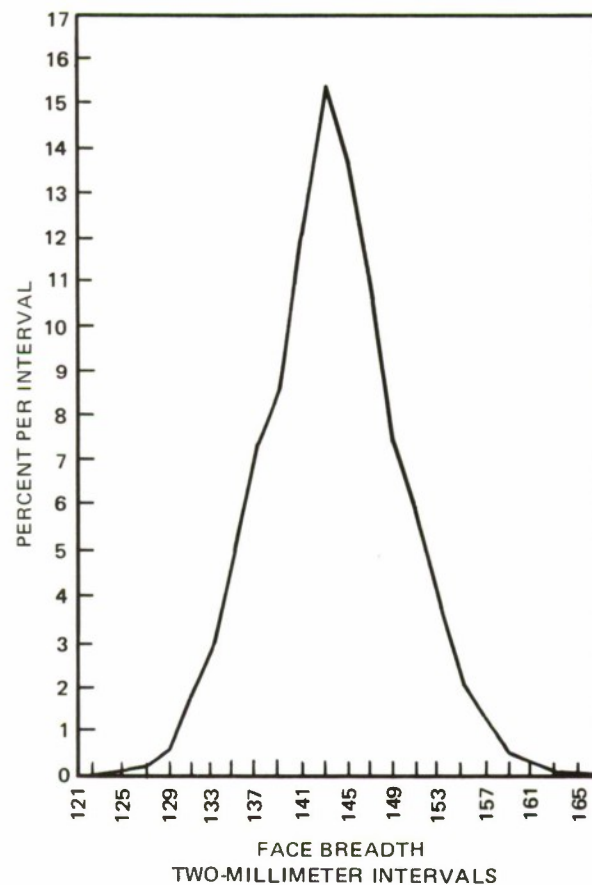
MEASUREMENT HEAD BREADTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
154.68	MEAN VALUE	6.09	175.5-176.5	1	2993	0.03	100.00
0.10	SE (MEAN)	0.00	174.5-175.5	2	2992	0.07	99.97
5.67	SD DEVIATION	0.22	173.5-174.5	4	2990	0.13	99.90
0.07	SE (SD DEV)	0.00	172.5-173.5	1	2986	0.03	99.77
* * * * *			171.5-172.5	5	2985	0.17	99.73
			170.5-171.5	2	2980	0.07	99.57
			169.5-170.5	5	2978	0.17	99.50
			168.5-169.5	4	2973	0.13	99.33
SYMMETRY - - - VETA I		= 0.19	167.5-168.5	21	2969	0.70	99.20
KURTOSIS - - - VETA II		= 3.11	166.5-167.5	20	2948	0.67	98.50
COEF. OF VARIATION		= 3.7%	165.5-166.5	28	2928	0.94	97.83
* * * * *			164.5-165.5	39	2900	1.30	96.89
			163.5-164.5	67	2861	2.24	95.59
			162.5-163.5	73	2794	2.44	93.35
			161.5-162.5	97	2721	3.24	90.91
NUMBER OF SUBJECTS		= 2993	160.5-161.5	112	2624	3.74	87.67
* * * * *			159.6-160.5	112	2512	3.74	83.93
			158.5-159.5	83	2400	2.77	80.19
			157.5-158.5	201	2317	6.72	77.14
			156.5-157.5	197	2116	6.58	70.70
THE PERCENTILES			155.5-156.5	225	1919	7.52	64.12
MILLIMETERS		INCHES	154.5-155.5	209	1694	6.98	56.60
168.22	99TH	6.62	153.5-154.5	176	1485	5.88	49.62
166.76	98TH	6.57	152.5-153.5	228	1309	7.62	43.74
165.61	97TH	6.52	151.5-152.5	210	1081	7.02	36.12
164.24	95TH	6.47	150.5-151.5	194	871	6.48	29.10
162.22	90TH	6.39	149.5-150.5	165	677	5.51	22.62
160.79	85TH	6.33	148.5-149.5	90	512	3.01	17.11
159.43	80TH	6.28	147.5-148.5	131	422	4.38	14.10
158.14	75TH	6.23	146.5-147.5	85	291	2.84	9.72
157.39	70TH	6.20	145.5-146.5	61	206	2.04	6.88
156.63	65TH	6.17	144.5-145.5	60	145	2.00	4.84
155.95	60TH	6.14	143.5-144.5	21	85	0.70	2.84
155.27	55TH	6.11	142.5-143.5	21	64	0.70	2.14
154.56	50TH	6.08	141.5-142.5	18	43	0.60	1.44
153.72	45TH	6.05	140.5-141.5	16	25	0.53	0.84
153.01	40TH	6.02	139.5-140.5	6	9	0.20	0.30
152.34	35TH	6.00	138.5-139.5	2	3	0.07	0.10
151.63	30TH	5.97	137.5-138.5	0	1	0.0	0.03
150.87	25TH	5.94	136.5-137.5	0	1	0.0	0.03
150.02	20TH	5.91	135.5-136.5	0	1	0.0	0.03
148.80	15TH	5.86	134.5-135.5	0	1	0.0	0.03
147.56	10TH	5.81	133.5-134.5	1	1	0.03	0.03
145.58	5TH	5.73	*MILLIMETERS				
144.58	3RD	5.69					
143.30	2ND	5.64					
141.77	1ST	5.58					



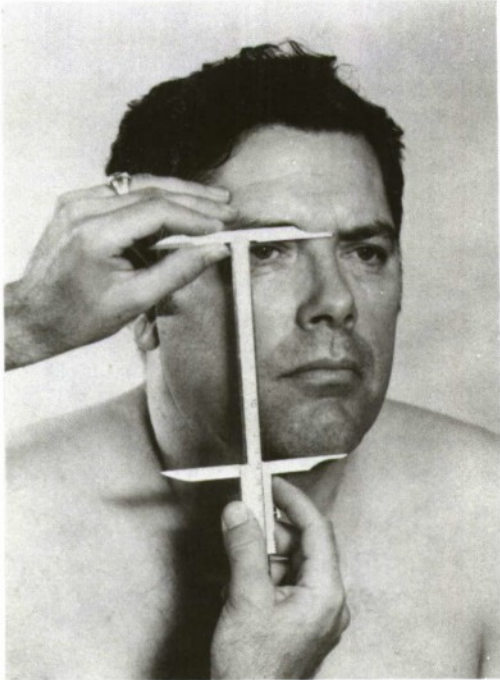
FACE BREADTH

FACE BREADTH: Subject sits erect with head level. The maximum horizontal breadth of the face is measured between the lateral projections of the cheek bones (zygomatic arches). Spreading calipers are used.



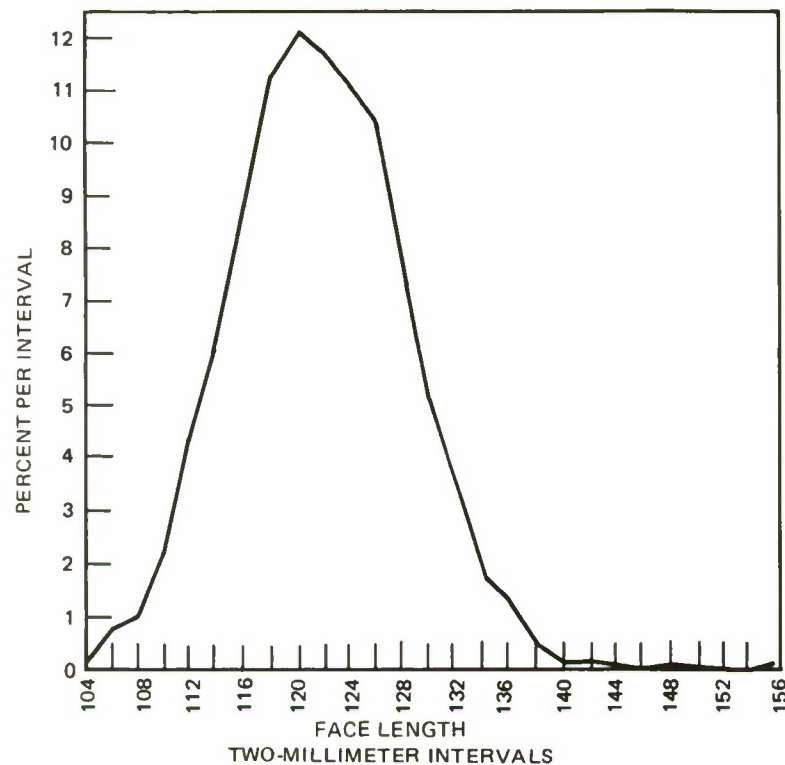
MEASUREMENT FACE BREADTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
143.02	MEAN VALUE	5.63	165.5-167.5	1	2993	0.03	100.00
0.11	SE (MEAN)	0.00	163.5-165.5	0	2922	0 0	99.97
6.04	SD DEVIATION	0.24	161.5-163.5	3	2992	0.10	99.97
0.08	SE (SD DEV)	0.00	159.5-161.5	11	2989	0.37	99.87
			157.5-159.5	17	2978	0.57	99.50
			155.5-157.5	43	2961	1.44	98.93
			153.5-155.5	61	2918	2.04	97.49
SYMMETRY - - - VETA I	= 0.08		151.5-153.5	112	2857	3.74	95.46
KURTOSIS - - - VETA II	= 3.15		149.5-151.5	178	2745	5.95	91.71
COEF. OF VARIATION	= 4.2%		147.5-149.5	222	2567	7.42	85.77
			145.5-147.5	317	2345	10.59	78.35
			143.5-145.5	409	2028	13.67	67.76
			141.5-143.5	458	1619	15.30	54.09
NUMBER OF SUBJECTS	= 2993		139.5-141.5	360	1161	12.03	38.79
			137.5-139.5	259	801	2.65	26.76
			135.5-137.5	222	542	7.42	18.11
			133.5-135.5	151	320	5.05	10.69
			131.5-133.5	86	169	2.87	5.65
			129.5-131.5	52	83	1.74	2.77
			127.5-129.5	19	31	0.63	1.04
			125.5-127.5	7	12	0.23	0.40
			123.5-125.5	4	5	0.13	0.17
			121.5-123.5	0	1	0.0	0.03
			119.5-121.5	1	1	0.03	0.03
			*MILLIMETERS				
THE PERCENTILES							
MILLIMETERS		INCHES					
157.74	99TH	6.21					
156.20	98TH	6.15					
155.02	97TH	6.10					
153.26	95TH	6.03					
150.92	90TH	5.94					
149.29	85TH	5.88					
147.95	80TH	5.82					
146.87	75TH	5.78					
145.92	70TH	5.57					
145.10	65TH	5.71					
144.36	60TH	5.68					
143.63	55TH	5.65					
142.97	50TH	5.63					
142.31	45TH	5.60					
141.66	40TH	5.58					
140.87	35TH	5.55					
140.04	30TH	5.51					
139.09	25TH	5.48					
137.94	20TH	5.43					
136.66	15TH	5.38					
135.23	10TH	5.32					
133.05	5TH	5.24					
131.66	3RD	5.18					
130.61	2ND	5.14					
129.39	1ST	5.09					



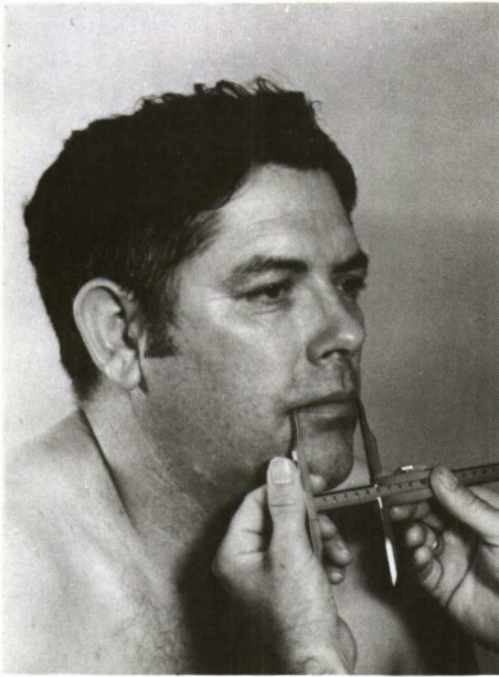
FACE LENGTH

FACE LENGTH: Subject sits erect with head level. Face length is measured as the vertical distance from the tip of the bone at the chin (menton) to the nasal root depression between the eyes. Jaws are closed in a relaxed manner and the teeth are not clenched. Sliding calipers are used.



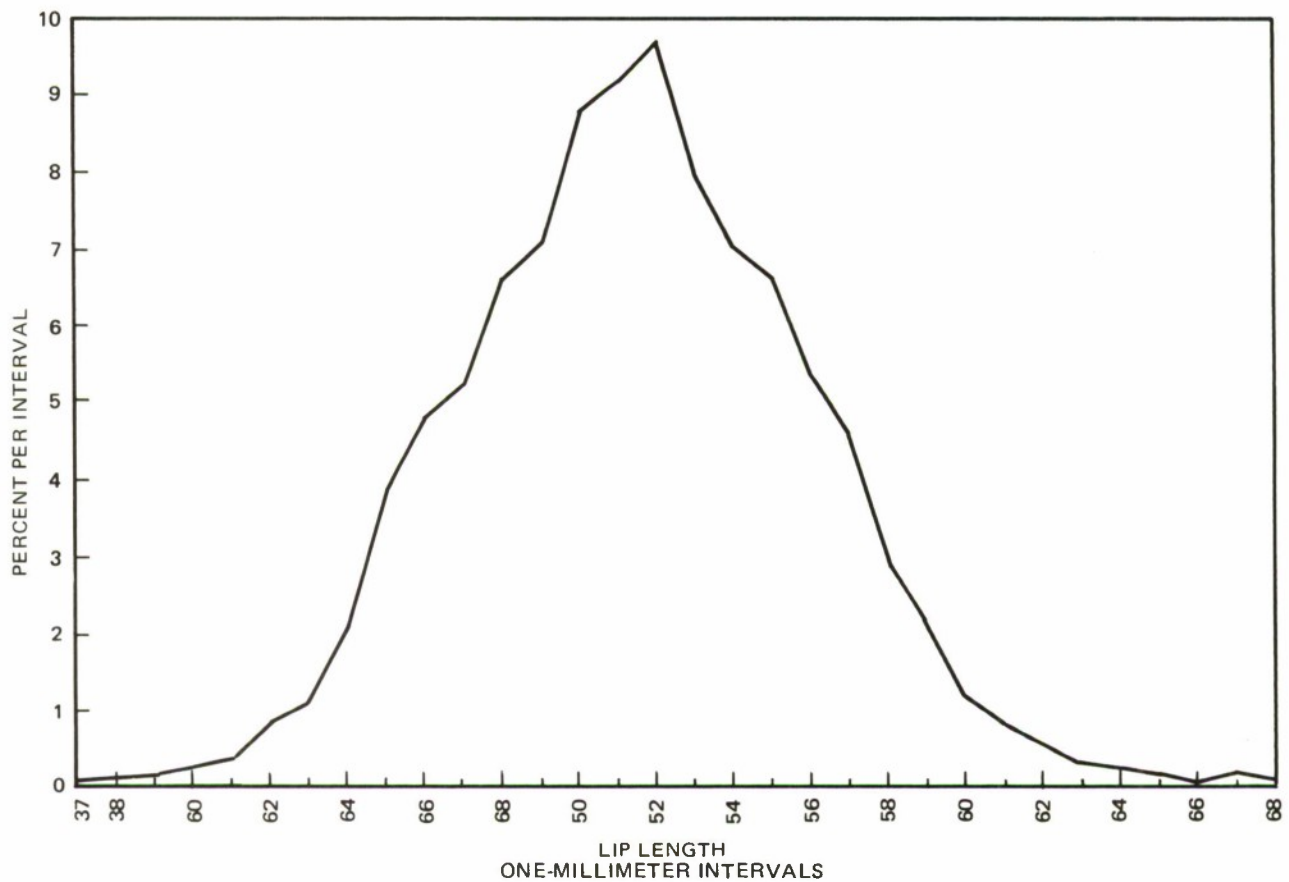
MEASUREMENT FACE LENGTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
121.29	MEAN VALUE	4.78	154.5-156.5	1	2989	0.03	100.00
0.12	SE (MEAN)	0.00	152.5-154.5	0	2988	0.0	99.97
6.42	SD DEVIATION	0.25	150.5-152.5	0	2988	0.0	99.97
0.08	SE (SD DEV)	0.00	148.5-150.5	1	2988	0.03	99.97
			146.5-148.5	1	2987	0.03	99.93
	***		144.5-146.5	0	2986	0.0	99.90
			142.5-144.5	3	2986	0.10	99.90
SYMMETRY - - - VETA 1	= 0.23		140.5-142.5	5	2983	0.17	99.80
KURTOSIS - - - VETA 11	= 3.30		138.5-140.5	5	2978	0.17	99.63
COEF. OF VARIATION	= 5.3%		136.5-138.5	15	2973	0.50	99.46
			134.5-136.5	41	2958	1.37	98.96
	***		132.5-134.5	52	2917	1.74	97.59
			130.5-132.5	106	2865	3.55	95.85
NUMBER OF SUBJECTS	= 2989		128.5-130.5	153	2759	5.12	92.31
			126.5-128.5	219	2606	7.33	87.19
	***		124.5-126.5	313	2387	10.47	79.86
			122.5-124.5	332	2074	11.11	69.39
THE PERCENTILES			120.5-122.5	353	1742	11.81	58.28
			118.5-120.5	363	1389	12.14	46.47
MILLIMETERS		INCHES	116.5-118.5	337	1026	11.27	34.33
136.65	99TH	5.38	114.5-116.5	266	689	8.90	23.05
135.10	98TH	5.32	112.5-114.5	179	423	5.99	14.15
133.82	97TH	5.27	110.5-112.5	126	244	4.22	8.16
132.02	95TH	5.20	108.5-110.5	64	118	2.14	3.95
129.60	95TH	5.10	106.5-108.5	30	54	1.00	1.81
127.90	85TH	5.04	104.5-106.5	21	24	0.70	0.80
129.54	80TH	4.98	102.5-104.5	3	3	0.10	0.10
125.57	75TH	4.94	*MILLIMETERS				
124.62	70TH	4.91					
123.71	65TH	4.87					
122.81	60TH	4.84					
121.94	55TH	4.80					
121.10	50TH	4.77					
120.26	45TH	4.73					
119.43	40TH	4.70					
118.61	35TH	4.67					
117.73	30TH	4.64					
116.85	25TH	4.60					
115.81	20TH	4.56					
114.69	15TH	4.52					
113.11	10TH	4.45					
111.00	5TH	4.37					
109.61	3RD	4.32					
108.68	2ND	4.28					
106.89	1ST	4.21					



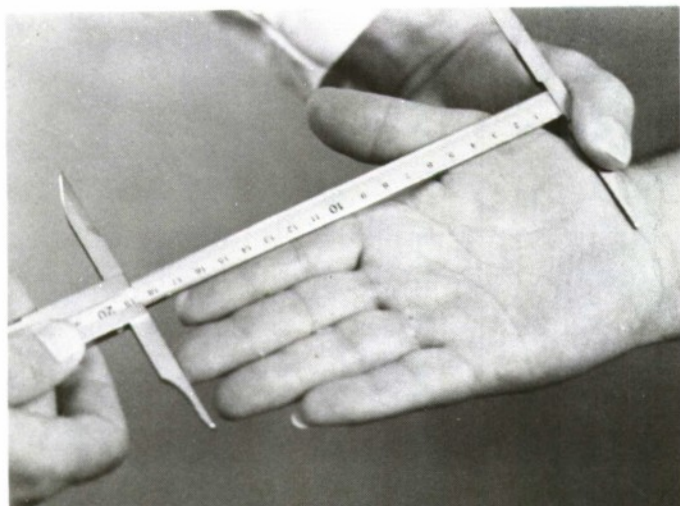
LIP LENGTH

LIP LENGTH: Subject's facial muscles are relaxed, jaws are closed in a relaxed manner, and the teeth are not clenched. The maximum distance between the corners of the mouth is measured. Sliding calipers are used.



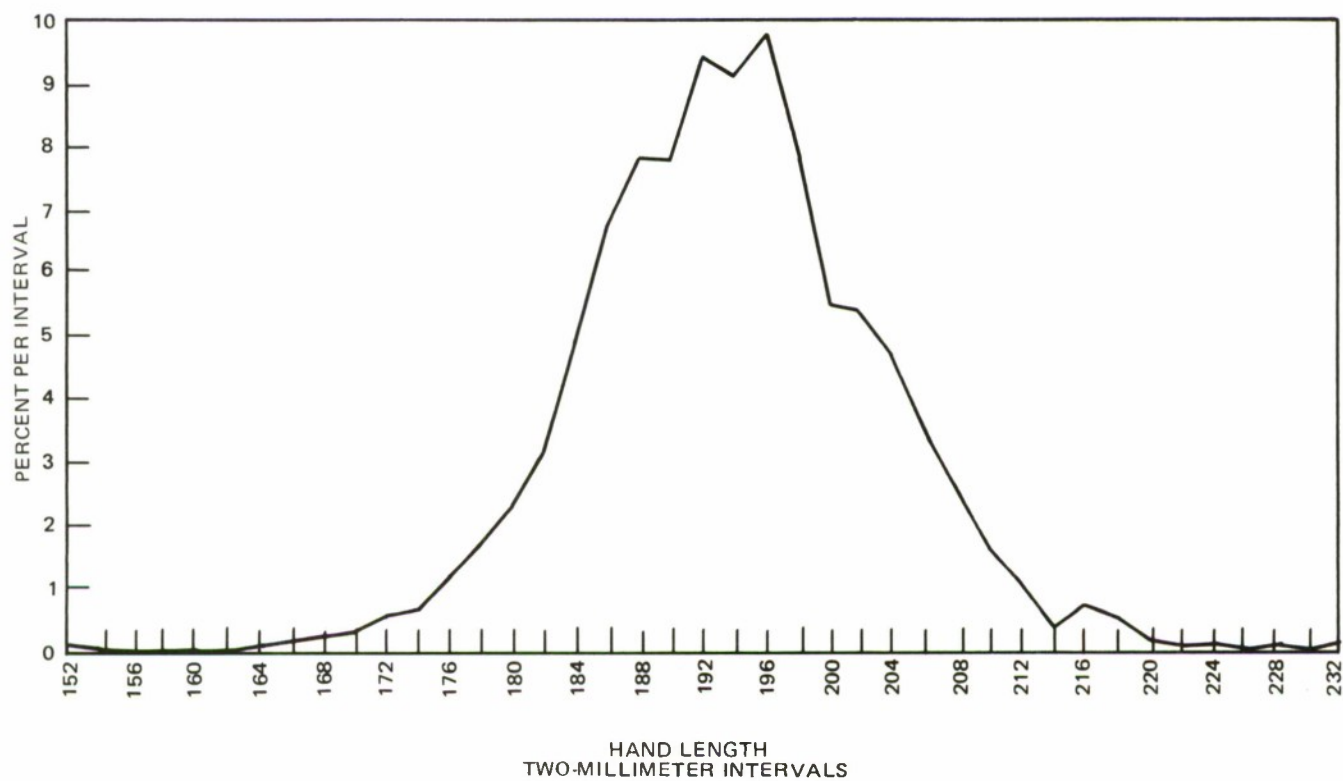
MEASUREMENT LIP LENGTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
51.51	MEAN VALUE	2.03	67.5-68.5	1	2992	0.03	100.00
0.08	SE (MEAN)	0.00	66.5-67.5	2	2991	0.07	99.97
4.38	SD DEVIATION	0.17	65.5-66.5	1	2980	0.03	99.90
0.06	SE (SD DEV)	0.00	64.5-65.5	4	2988	0.13	99.87
			63.5-64.5	7	2984	0.23	99.73
	*****		62.5-63.5	8	2977	0.27	99.50
			61.5-62.5	17	2969	0.57	99.23
SYMMETRY --- VETA I	= 0.12		60.5-61.5	25	2952	0.84	98.66
KURTOSIS --- VETA II	= 2.96		59.5-60.5	38	2927	1.27	97.83
COEF. OF VARIATION	= 8.5%		58.5-59.5	64	2889	2.14	96.56
			57.5-58.5	83	2825	2.77	94.42
	*****		56.5-57.5	136	2742	4.55	91.64
			55.5-56.5	162	2606	5.41	87.10
NUMBER OF SUBJECTS	= 2992		54.5-55.5	198	2444	6.62	81.68
			53.5-54.5	211	2246	7.05	75.07
	*****		52.5-53.5	239	2035	7.99	68.01
			51.5-52.5	290	1796	9.69	60.03
THE PERCENTILES			50.5-51.5	274	1506	9.16	50.33
			49.5-50.5	264	1232	8.82	41.18
MILLIMETERS		INCHES	48.5-49.5	212	968	7.09	32.35
62.09	99TH	2.44	47.5-48.5	197	756	6.58	25.27
60.71	98TH	2.39	46.5-47.5	156	559	5.21	18.68
59.85	97TH	2.36	45.5-46.5	141	403	4.71	13.47
58.71	95TH	2.31	44.5-45.5	118	262	3.94	8.76
57.14	90TH	2.25	43.5-44.5	65	144	2.17	4.81
56.11	85TH	2.21	42.5-43.5	33	79	1.10	2.64
55.25	80TH	2.18	41.5-42.5	24	46	0.80	1.54
54.49	75TH	2.15	40.5-41.5	13	22	0.43	0.74
53.78	70TH	2.12	39.5-40.5	5	9	0.17	0.30
53.12	65TH	2.09	38.5-39.5	2	4	0.07	0.13
52.50	60TH	2.07	37.5-38.5	1	2	0.03	0.07
51.98	55TH	2.05	36.5-37.5	1	1	0.03	0.03
51.46	50TH	2.03	*MILLIMETERS				
50.92	45TH	2.00					
50.37	40TH	1.98					
49.80	35TH	1.96					
49.17	30TH	1.94					
48.46	25TH	1.91					
47.70	20TH	1.88					
46.79	15TH	1.84					
45.76	10TH	1.80					
44.55	5TH	1.75					
43.67	3RD	1.72					
42.92	2ND	1.69					
41.83	1ST	1.65					



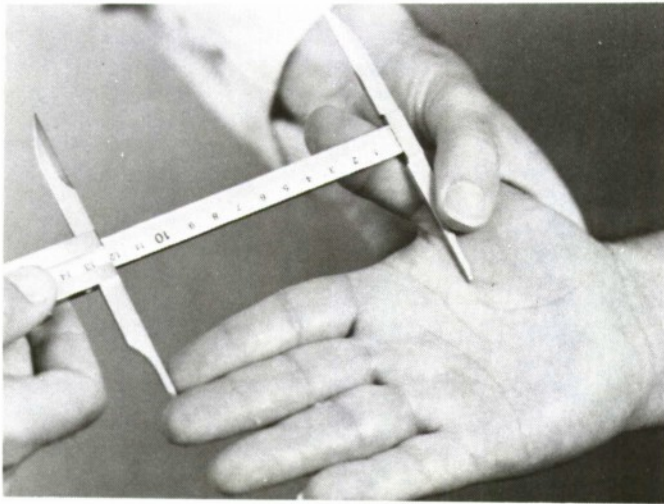
HAND LENGTH

HAND LENGTH: Subject sits with his right hand and fingers extended, palm up. The length of the right hand is measured from the most distal excursion of the distal wrist crease to the tip of the middle finger. Sliding calipers are used.



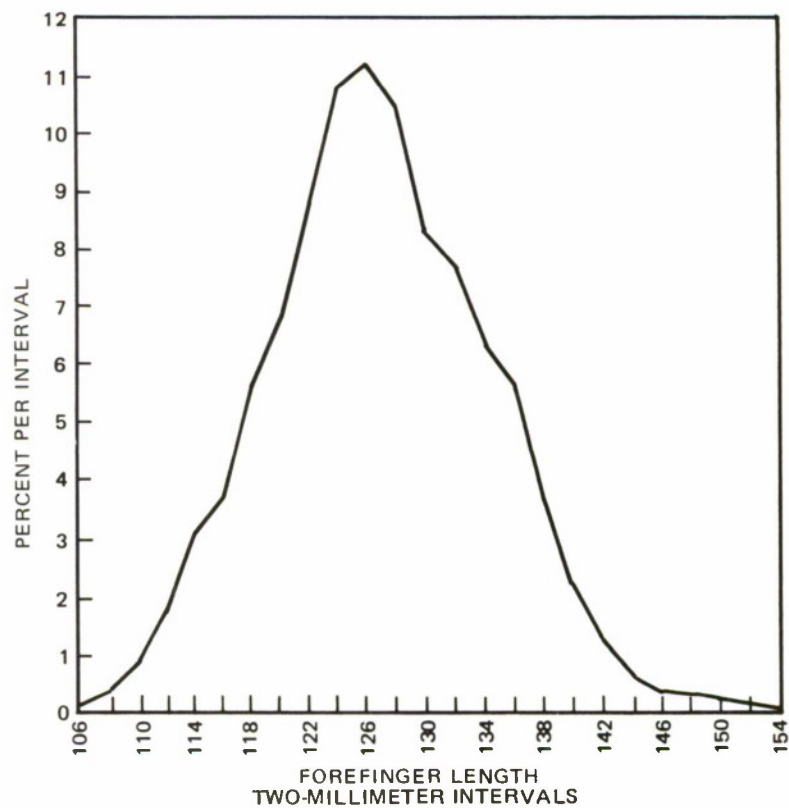
MEASUREMENT HAND LENGTH

MILLIMETERS			INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
193.46	MEAN VALUE	7.62		230.5-232.5	2	2989	0.07	100.00
0.17	SE (MEAN)	0.01		228.5-230.5	0	2987	0.0	99.93
9.12	SD DEVIATION	0.36		226.5-228.5	1	2987	0.03	99.93
0.12	SE (SD DEV)	0.00		224.5-226.5	0	2986	0.0	99.90
				222.5-224.5	4	2986	0.13	99.90
				220.5-222.5	4	2982	0.13	99.77
				218.5-220.5	6	2978	0.20	99.63
SYMMETRY - - - VETA I			= 0.18	216.5-218.5	16	2972	0.54	99.43
KURTOSIS - - - VETA II			= 3.52	214.5-216.5	23	2956	0.77	98.90
COEF. OF VARIATION			= 4.7%	212.5-214.5	14	2933	0.47	98.13
				210.5-212.5	34	2919	1.14	97.66
				208.5-210.5	49	2885	1.64	96.52
				206.5-208.5	76	2836	2.54	94.88
NUMBER OF SUBJECTS			= 2989	204.5-206.5	102	2760	3.41	92.34
				202.5-204.5	141	2658	4.72	88.93
				200.5-202.5	163	2517	5.45	84.21
				198.5-200.5	166	2354	5.55	78.76
				196.5-198.5	229	2188	7.66	73.20
				194.5-196.5	290	1959	9.70	65.54
THE PERCENTILES				192.5-194.5	273	1669	9.13	55.84
				190.5-192.5	281	1396	9.40	46.70
MILLIMETERS			INCHES	188.5-190.5	233	1115	7.80	37.30
				186.5-188.5	235	882	7.86	29.51
216.89	99TH	8.54		184.5-186.5	202	647	6.76	21.65
213.96	98TH	8.42		182.5-184.5	145	445	4.85	14.89
211.34	97TH	8.32		180.5-182.5	94	300	3.14	10.04
208.64	95TH	8.21		178.5-180.5	70	206	2.34	6.89
205.13	90TH	8.08		176.5-178.5	49	136	1.64	4.55
202.84	85TH	7.99		174.5-176.5	35	87	1.17	2.91
200.96	80TH	7.91		172.5-174.5	19	52	0.64	1.74
199.15	75TH	7.84		170.5-172.5	15	33	0.50	1.10
197.66	70TH	7.78		168.5-170.5	8	18	0.27	0.60
196.30	65TH	7.73		166.5-168.5	6	10	0.20	0.33
195.36	60TH	7.69		164.5-166.5	2	4	0.07	0.13
194.32	55TH	7.65		162.5-164.5	1	2	0.03	0.07
193.22	50TH	7.61		160.5-162.5	0	1	0.0	0.03
193.14	45TH	7.56		158.5-160.5	0	1	0.0	0.03
191.07	40TH	7.52		156.5-158.5	0	1	0.0	0.03
189.91	35TH	7.48		154.5-156.5	0	1	0.0	0.03
188.63	30TH	7.43		152.5-154.4	0	1	0.0	0.03
187.35	25TH	7.38		150.5-152.5	1	1	0.03	0.03
186.01	20TH	7.32		*MILLIMETERS				
184.53	15TH	7.27						
182.48	10TH	7.18						
178.88	5TH	7.04						
176.61	3RD	6.95						
174.94	2ND	6.89						
172.09	1ST	6.77						



FOREFINGER LENGTH

FOREFINGER LENGTH: Subject sits with his right hand and fingers extended, palm up, and with his thumb extended away from the hand. The length of the forefinger is measured from the skinfold at the base of the thumb to the tip of the forefinger. Sliding calipers are used.



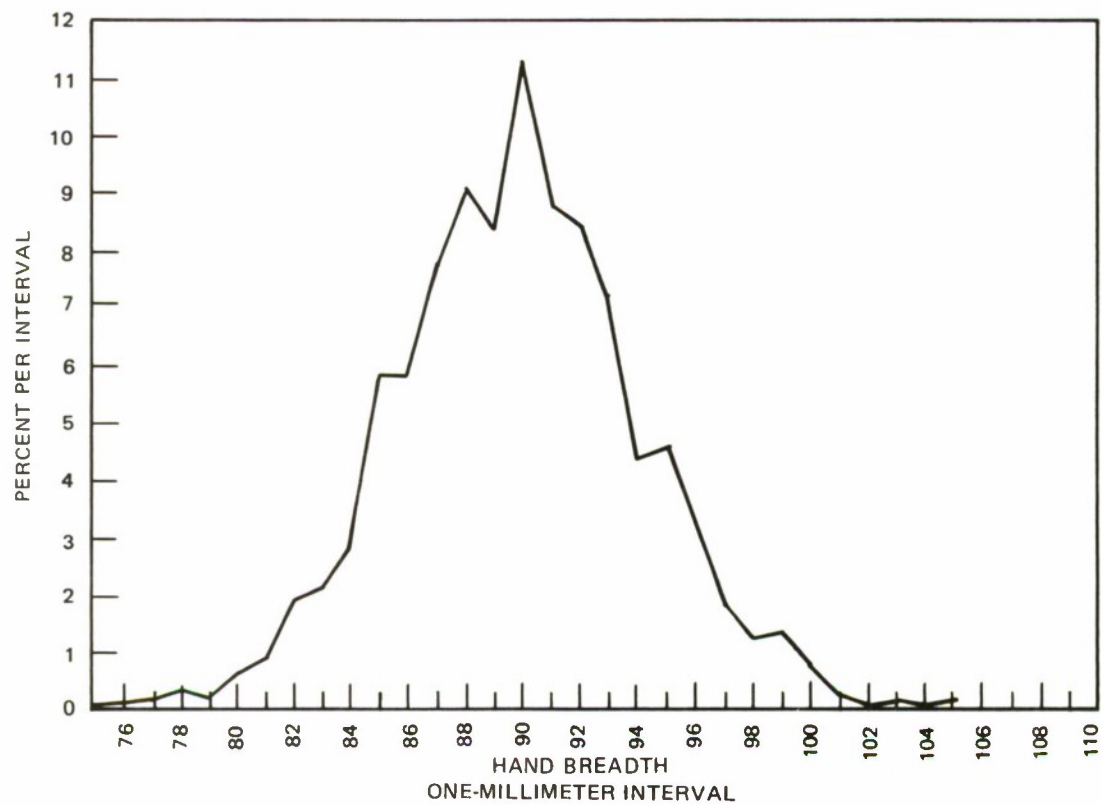
MEASUREMENT FOREFINGER LENGTH

MILLIMETERS			INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
126.23	MEAN VALUE	4.97		152.5-154.5	1	2987	0.03	100.00
0.14	SE (MEAN)	0.01		150.5-152.5	5	2986	0.17	99.97
7.62	SD DEVIATION	0.30		148.5-150.5	7	2981	0.23	99.80
0.10	SE (SD DEV)	0.00		146.5-148.5	12	2974	0.40	99.56
				144.5-146.5	14	2962	0.47	99.16
	* * * * *			142.5-144.5	19	2948	0.64	98.69
				140.5-142.5	37	2929	1.24	98.06
SYMMETRY - - - VETA I	= 0.18			138.5-140.5	63	2892	2.11	96.82
KURTOSIS - - - VETA II	= 3.03			136.5-138.5	105	2829	3.52	94.71
COEF. OF VARIATION	= 6.0%			134.5-136.5	166	2724	5.56	91.20
				132.5-134.5	186	2558	6.23	85.64
	* * * * *			130.5-132.5	230	2372	7.70	79.41
				128.5-130.5	247	2142	8.27	71.71
NUMBER OF SUBJECTS	= 2987			126.5-128.5	312	1895	10.45	63.44
				124.5-126.5	331	1583	11.08	53.00
	* * * * *			122.5-124.5	321	1252	10.75	41.91
				120.5-122.5	260	931	8.70	31.17
THE PERCENTILES				118.5-120.5	203	671	6.80	22.46
				116.5-118.5	169	468	5.66	15.67
MILLIMETERS		INCHES		114.5-116.5	110	299	3.68	10.01
145.80	99TH	5.74		112.5-114.5	94	189	3.15	6.33
142.41	98TH	5.61		110.5-112.5	52	95	1.74	3.18
140.79	97TH	5.54		108.5-110.5	26	43	0.87	1.44
138.77	95TH	5.46		106.5-108.5	12	17	0.40	0.57
136.07	90TH	5.36		104.5-106.5	5	5	0.17	0.17
134.30	85TH	5.29		*MILLIMETERS				
132.69	80TH	5.22						
131.35	75TH	5.17						
130.09	70TH	5.12						
128.88	65TH	5.07						
127.84	60TH	5.03						
126.88	55TH	5.00						
125.96	50TH	4.96						
125.06	45TH	4.92						
124.14	40TH	4.89						
123.21	35TH	4.85						
122.23	30TH	4.81						
121.08	25TH	4.77						
119.77	20TH	4.72						
118.26	15TH	4.66						
116.49	10TH	4.59						
113.66	5TH	4.47						
112.29	3RD	4.42						
111.14	2ND	4.38						
109.49	1ST	4.31						



HAND BREADTH

HAND BREADTH: Subject sits with his right hand and fingers extended, palm down, resting on, but not pressed against, the measuring bench. The breadth of the hand is measured at the level of the distal ends of the metacarpal bones. Sliding calipers are used.



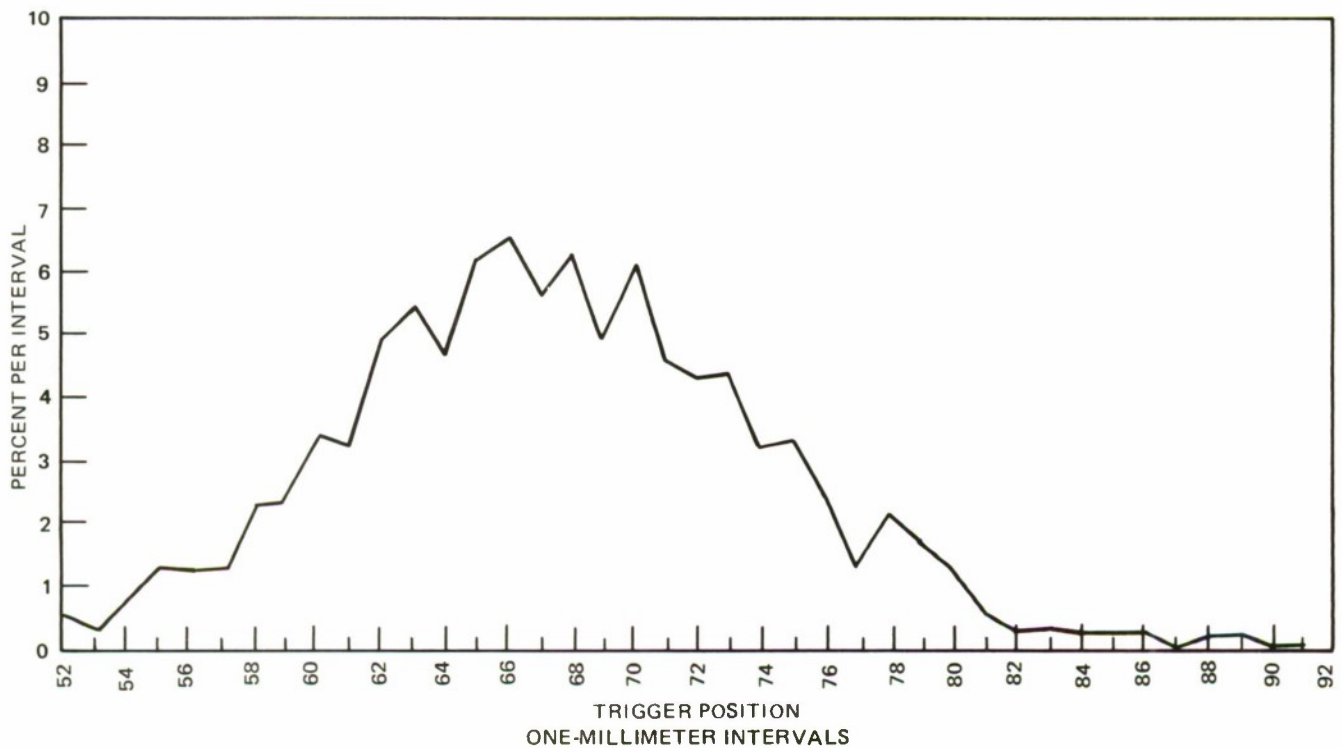
MEASUREMENT HAND BREADTH

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
89.88	MEAN VALUE	3.54	104.5-105.5	3	2987	0.10	100.00
0.08	SE (MEAN)	0.00	103.5-104.5	1	2984	0.03	99.90
4.24	SD DEVIATION	0.17	102.5-103.5	4	2983	0.13	99.87
0.05	SE (SD DEV)	0.00	101.5-102.5	2	2979	0.07	99.73
			100.5-101.5	9	2977	0.30	99.67
* * * *			99.5-100.5	26	2968	0.87	99.36
			98.5-99.5	41	2942	1.37	98.49
SYMMETRY --- VETA I	= 0.09		97.5-98.5	38	2901	1.27	97.12
KURTOSIS --- VETA II	= 3.17		96.5-97.5	57	2863	1.91	95.85
COEF. OF VARIATION	= 4.7%		95.5-96.5	98	2806	3.28	93.94
			94.5-95.5	137	2708	4.59	90.66
* * * *			93.5-94.5	132	2571	4.42	86.07
			92.5-93.5	216	2439	7.23	81.65
NUMBER OF SUBJECTS	= 2987		91.5-92.5	253	2223	8.47	74.42
			90.5-91.5	260	1970	8.70	65.95
* * * *			89.5-90.5	338	1710	11.32	57.25
			88.5-89.5	251	1372	8.40	45.93
THE PERCENTILES			87.5-88.5	271	1121	9.07	37.53
			86.5-87.5	232	850	7.77	28.46
MILLIMETERS		INCHES	85.5-86.5	173	618	5.79	20.69
100.08	99TH	3.94	84.5-85.5	174	445	5.83	14.90
99.14	98TH	3.90	83.5-84.5	84	271	2.81	9.07
98.41	97TH	3.87	82.5-83.5	65	187	2.18	6.26
97.06	95TH	3.82	81.5-82.5	57	122	1.91	4.08
95.36	90TH	3.75	80.5-81.5	27	65	0.90	2.18
94.26	85TH	3.71	79.5-80.5	17	38	0.57	1.27
93.27	80TH	3.67	78.5-79.5	7	21	0.23	0.70
92.58	75TH	3.64	77.5-78.5	10	14	0.33	0.47
91.98	70TH	3.62	76.5-77.5	2	4	0.07	0.13
91.39	65TH	3.60	75.5-76.5	1	2	0.03	0.07
90.82	60TH	3.58	74.5-75.5	1	1	0.03	0.03
90.30	55TH	3.56	*MILLIMETERS				
89.86	50TH	3.54					
89.39	45TH	3.52					
88.79	40TH	3.50					
88.22	35TH	3.47					
87.67	30TH	3.45					
87.05	25TH	3.43					
86.38	20TH	3.40					
85.52	15TH	3.37					
84.66	10TH	3.33					
82.92	5TH	3.26					
81.93	3RD	3.23					
81.31	2ND	3.20					
80.02	1ST	3.15					



TRIGGER POSITION

TRIGGER POSITION: Subject holds the measuring device in the hand which he prefers to use for firing a weapon. He adjusts the sliding trigger to the position where he would want it to be if he were using a double action revolver in a combat situation. The distance is measured from the heel of the revolver to the furthest indentation of the trigger. A measuring device resembling a revolver with a moveable trigger and a fixed scale is used.

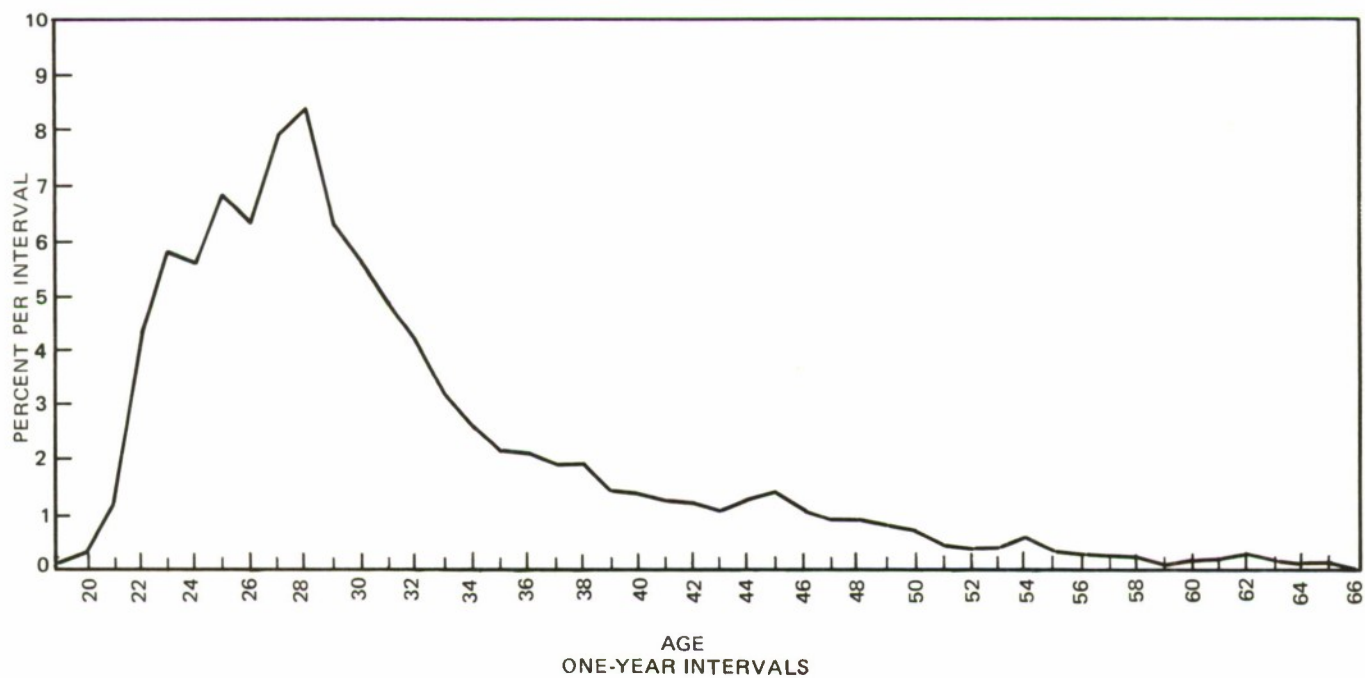


MEASUREMENT TRIGGER POSITION

MILLIMETERS		INCHES	RANGES*	F	CUMF	FPCT	CUMPCT
67.65	MEAN VALUE	2.66	90.5-91.5	2	2868	0.07	100.00
0.13	SE (MEAN)	0.00	89.5-90.5	2	2866	0.07	99.93
6.72	SD DEVIATION	0.26	88.5-89.5	6	2864	0.21	99.86
0.09	SE (SD DEV)	0.00	87.5-88.5	7	2858	0.24	99.65
			86.5-87.5	2	2851	0.07	99.41
	***		85.5-86.5	9	2849	0.31	99.34
			84.5-85.5	10	2840	0.35	99.02
SYMMETRY - - - VETA I	= 0.28		83.5-84.5	12	2830	0.42	98.67
KURTOSIS - - - VETA II	= 3.08		82.5-83.5	9	2818	0.31	98.26
COEF. OF VARIATION	= 9.9%		81.5-82.5	9	2809	0.31	97.94
			80.5-81.5	16	2800	0.56	97.63
	***		79.5-80.5	39	2784	1.36	97.07
			78.5-79.5	50	2745	1.74	95.71
NUMBER OF SUBJECTS	= 2868		77.5-78.5	61	2695	2.13	93.97
			76.5-77.5	41	2634	1.43	91.84
	***		75.5-76.5	70	2593	2.44	90.41
			74.5-75.5	95	2523	3.31	87.97
THE PERCENTILES			73.5-74.5	91	2428	3.17	84.66
			72.5-73.5	127	2337	4.43	81.49
MILLIMETERS		INCHES	71.5-72.5	124	2210	4.32	77.06
85.43	99TH	3.36	70.5-71.5	131	2086	4.57	72.73
82.68	98TH	3.26	69.5-70.5	175	1955	6.10	68.17
80.45	97TH	3.17	68.5-69.5	142	1780	4.95	62.06
79.09	95TH	3.11	67.5-68.5	181	1638	6.31	57.11
76.33	90TH	3.01	66.5-67.5	160	1457	5.58	50.80
74.60	85TH	2.94	65.5-66.5	188	1297	6.56	45.22
73.16	80TH	2.88	64.5-65.5	178	1109	6.21	38.67
72.02	75TH	2.84	63.5-64.5	132	931	4.60	32.46
70.90	70TH	2.79	62.5-63.5	157	799	5.47	27.86
69.98	65TH	2.76	61.5-62.5	143	642	4.99	22.38
69.08	60TH	2.72	60.5-61.5	92	499	3.21	17.40
68.17	55TH	2.68	59.5-60.5	98	407	3.42	14.19
67.36	50TH	2.65	58.5-59.5	70	309	2.44	10.77
66.47	45TH	2.62	57.5-58.5	67	239	2.34	8.33
65.70	40TH	2.59	56.5-57.5	39	172	1.36	6.00
64.91	35TH	2.56	55.5-56.5	38	133	1.32	4.64
63.97	30TH	2.52	54.5-55.5	41	95	1.43	3.31
62.98	25TH	2.48	53.5-54.5	27	54	0.94	1.88
62.02	20TH	2.44	52.5-53.5	11	27	0.38	0.94
60.75	15TH	2.39	51.5-52.5	16	16	0.56	0.56
59.18	10TH	2.33	*MILLIMETERS				
56.77	5TH	2.23					
55.28	3RD	2.18					
54.58	2ND	2.15					
53.56	1ST	2.11					

AGE

AGE: Subject records his date of birth. Age is computed to the nearest completed year at the time of measuring.

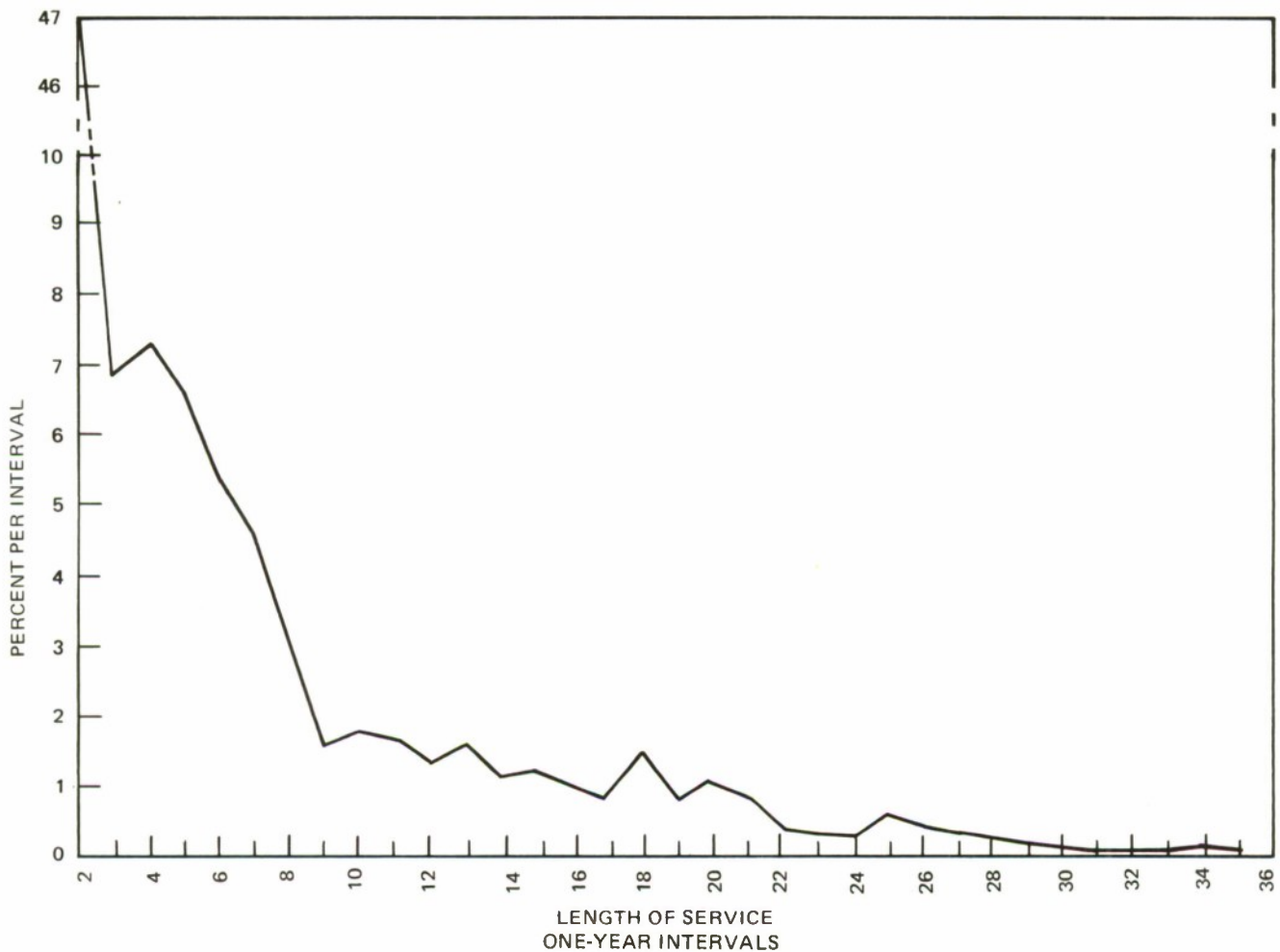


MEASUREMENT AGE

	YEARS	RANGES*	F	CUMF	FPCT	CUMPCT
MEAN VALUE	30.71	64.0-65.0	4	2969	0.13	100.00
SE (MEAN)	0.16	63.0-64.0	3	2965	0.10	99.86
SD DEVIATION	8.67	62.0-63.0	5	2962	0.17	99.76
SE (SD DEV)	0.11	61.0-62.0	9	2957	0.30	99.60
		60.0-61.0	7	2948	0.24	99.29
		59.0-60.0	5	2941	0.17	99.06
		58.0-59.0	4	2936	0.13	98.89
SYMMETRY --- VETA I =	1.35	57.0-58.0	7	2932	0.24	98.75
KURTOSIS --- VETA II =	4.48	56.0-57.0	8	2925	0.27	98.52
COEF. OF VARIATION =	28.2%	55.0-56.0	11	2917	0.37	98.25
		54.0-55.0	14	2906	0.47	97.88
		53.0-54.0	18	2892	0.61	97.41
		52.0-53.0	14	2874	0.47	96.80
NUMBER OF SUBJECTS =	2969	51.0-52.0	14	2860	0.47	96.33
		50.0-51.0	15	2846	0.51	95.86
		49.0-50.0	21	2831	0.71	95.35
		48.0-49.0	24	2810	0.81	94.64
		47.0-48.0	29	2786	0.98	93.84
THE PERCENTILES		46.0-47.0	29	2757	0.98	92.86
		45.0-46.0	35	2728	1.18	91.88
YEARS		44.0-45.0	44	2693	1.48	90.70
59.66	99TH	43.0-44.0	39	2649	1.31	89.22
55.33	98TH	42.0-43.0	32	2610	1.08	87.91
53.33	97TH	41.0-42.0	36	2578	1.21	86.83
49.50	95TH	40.0-41.0	38	2542	1.28	85.62
44.53	90TH	39.0-40.0	43	2504	1.45	84.34
40.52	85TH	38.0-39.0	44	2461	1.48	82.89
37.27	80TH	37.0-38.0	57	2417	1.92	81.41
34.81	75TH	36.0-37.0	57	2360	1.92	79.49
32.81	70TH	35.0-36.0	64	2303	2.16	77.57
31.42	65TH	34.0-35.0	65	2239	2.19	75.41
30.31	60TH	33.0-34.0	77	2174	2.59	73.22
29.37	55TH	32.0-33.0	96	2097	3.23	70.63
28.52	50TH	31.0-32.0	123	2001	4.14	67.40
27.79	45TH	30.0-31.0	141	1878	4.75	63.25
27.20	40TH	29.0-30.0	164	1737	5.52	58.50
26.58	35TH	28.0-29.0	186	1573	6.26	52.98
25.94	30TH	27.0-28.0	248	1387	8.35	46.72
25.15	25TH	26.0-27.0	237	1139	7.98	38.36
24.41	20TH	25.0-26.0	189	902	6.37	30.38
23.59	15TH	24.0-25.0	201	713	6.77	24.01
22.70	10TH	23.0-24.0	164	512	5.52	17.24
21.79	5TH	22.0-23.0	173	348	5.83	11.72
21.32	3RD	21.0-22.0	126	175	4.24	5.89
21.08	2ND	20.0-21.0	36	49	1.21	1.65
20.46	1ST	19.0-20.0	11	13	0.37	0.44
		18.0-19.0	2	2	0.07	0.07
		*YEARS				

LENGTH OF SERVICE

LENGTH OF SERVICE: Subject records the date when he first became a sworn officer of any law enforcement agency. Length of service is computed to the nearest year as of the end of the measuring survey.



MEASUREMENT LENGTH OF SERVICE

	YEARS	RANGES*	F	CUMF	FPCT	CUMPCT
MEAN VALUE	4.82	34.0-35.0	1	2969	0.03	100.00
SE (MEAN)	0.11	33.0-34.0	2	2968	0.07	99.97
SD DEVIATION	5.86	32.0-33.0	1	2966	0.03	99.90
SE (SD DEV)	0.08	31.0-32.0	1	2965	0.03	99.87
		30.0-31.0	1	2964	0.03	99.83
*****		29.0-30.0	1	2963	0.03	99.80
		28.0-29.0	3	2962	0.10	99.76
SYMMETRY - - - VETA 1 = 1.93		27.0-28.0	8	2959	0.27	99.66
KURTOSIS - - - VETA 11 = 6.33		26.0-27.0	11	2951	0.37	99.39
COEF. OF VARIATION = 121.5%		25.0-26.0	14	2940	0.47	99.02
		24.0-25.0	16	2926	0.54	98.55
*****		23.0-24.0	8	2910	0.27	98.01
		22.0-23.0	12	2902	0.40	97.74
NUMBER OF SUBJECTS = 2969		21.0-22.0	14	2890	0.47	97.34
		20.0-21.0	25	2876	0.84	96.87
*****		19.0-20.0	32	2851	1.08	96.03
		18.0-19.0	24	2819	0.81	94.95
THE PERCENTILES		17.0-18.0	45	2795	1.52	94.14
YEARS		16.0-17.0	24	2750	0.81	92.62
25.95 99TH		15.0-16.0	30	2726	1.01	91.82
23.95 98TH		14.0-15.0	39	2696	1.31	90.80
21.28 97TH		13.0-14.0	38	2657	1.28	89.49
19.05 95TH		12.0-13.0	47	2619	1.58	88.21
14.39 90TH		11.0-12.0	42	2573	1.41	86.63
10.88 85TH		10.0-11.0	51	2530	1.72	85.21
7.99 80TH		9.0-10.0	53	2479	1.79	83.50
6.55 75TH		8.0-9.0	50	2426	1.68	81.71
5.54 70TH		7.0-8.0	89	2376	3.00	80.03
4.68 65TH		6.0-7.0	135	2287	4.55	77.03
3.93 60TH		5.0-6.0	159	2152	5.36	72.43
3.24 55TH		4.0-5.0	196	1993	6.60	67.13
2.53 50TH		3.0-4.0	216	1797	7.28	60.53
1.97 45TH		2.0-3.0	205	1581	6.90	53.25
1.86 40TH		1.0-2.0	1376	1376	46.35	46.35
1.76 35TH		*YEARS				
1.65 30TH						
1.54 25TH						
1.43 20TH						
1.32 15TH						
1.22 10TH						
1.11 5TH						
1.06 3RD						
1.04 2ND						
1.02 1ST						

AGENCY

TOTAL NUMBER = 2993

	NUMBER	PERCENT
POLICE DEPARTMENT	2060	68.83
SHERIFF'S DEPARTMENT	521	17.41
HIGHWAY PATROL	134	4.48
PRISON/PEN.	236	7.89
STATE POLICE	42	1.40
OTHER	0	0.0
LEFT BLANK	0	0.0

AGENCY: Measurer records the type of agency to which the law enforcement officer is attached.

DUTY

TOTAL NUMBER = 2993

	NUMBER	PERCENT
PATROL	1199	40.06
TRAFFIC	139	4.64
INVESTIGATIONS	159	5.28
COMMUNICATIONS	21	0.70
ADMINISTRATION	157	5.25
OTHER	1294	43.27
LEFT BLANK	24	0.80

DUTY: Subject records the major type of duty to which he is currently assigned.

RANK

TOTAL NUMBER = 2993

	NUMBER	PERCENT
ACADEMY	956	31.94
PATROLMAN 3	67	2.24
PATROLMAN 2	51	1.70
PATROLMAN 1	1088	36.35
CORPORAL	30	1.00
SERGEANT	170	5.68
LIEUTENANT	53	1.77
MAJOR	3	0.10
CAPTAIN	17	0.57
INSPECTOR	2	0.07
ASSIST CHIEF	1	0.03
DEPUTY CHIEF	2	0.07
CHIEF	6	0.20
MARSHAL	2	0.07
OTHER	80	2.67
DEPUTY SHERIFF	299	9.99
PRISON GUARD	163	5.45
LEFT BLANK	3	0.10

RANK: Subject records his current rank.

PREDOMINANT ETHNIC BACKGROUND

TOTAL NUMBER = 2993

	NUMBER	PERCENT
BLACK	281	9.39
MEXICAN AMERICAN	98	3.27
PUERTO RICAN	16	0.53
CUBAN	11	0.37
HAWAIIAN	2	0.07
CHINESE	3	0.10
JAPANESE	3	0.10
OTHER ORIENTAL	4	0.13
AMERICAN INDIAN	42	1.40
EAST INDIAN	1	0.03
EUROPEAN, NORTH	241	8.05
EUROPEAN, EAST	141	4.71
EUROPEAN, SOUTH	205	6.85
EUROPEAN, WEST	1493	49.88
OTHER	93	3.11
WHITE AMERICAN	305	10.19
AMERICAN	5	0.17
CANADIAN	1	0.03
SOUTH AMERICAN	3	0.10
LEFT BLANK	45	1.50

PREDOMINANT ETHNIC BACKGROUND: Subject records his predominant ethnic background by selecting from fourteen categories.

PRIOR MILITARY SERVICE

TOTAL NUMBER = 2993

	NUMBER	PERCENT
YES	1928	64.42
NO	1059	35.38
LEFT BLANK	6	0.20

PRIOR MILITARY SERVICE: Subject indicates whether or not he has served in the military.

HANDEDNESS FOR WEAPON USAGE

TOTAL NUMBER = 2993

	NUMBER	PERCENT
RIGHT	2656	88.74
LEFT	217	7.25
AMBIDEXTROUS	114	3.81
LEFT BLANK	6	0.20

HANDEDNESS FOR WEAPON USAGE: Subject records which hand he prefers to use for firing a weapon when in a combat situation.

3.2 SUMMARY DATA FOR EACH MEASUREMENT BY SAMPLE CATEGORIES AND SUBCATEGORIES

This section presents data on the mean, standard deviation, and range obtained for each measurement from the sample categories and subcategories. In addition, the number of law enforcement officers measured for each of the sample groups is indicated.

This arrangement of the data makes it possible to determine, for a given measurement, the sample category or subcategory which possesses the largest or smallest average dimensions and the variations in average dimensions for the different sample groups. It also permits comparison of the ranges within each category or subcategory. For example, it is possible to readily determine whether there are major differences in chest breadth in different regions of the country.

MEASUREMENT WEIGHT

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>	
		kg	lb	kg	lb	kg	lb
<u>Total Sample</u>	2991	83.31	183.68	11.95	26.35	56-144	124-318
Experienced Officers	2036	85.23	187.90	12.32	27.15	56-144	124-318
Recruits	955	79.23	174.67	9.97	21.98	57-124	126-273
<u>Agency</u>							
Police	2059	82.67	182.25	11.29	24.90	56-140	124-308
Sheriff	570	85.35	188.16	13.93	30.72	56-144	124-318
Highway Patrol/State Police	176	83.34	183.73	10.63	23.43	63-125	138-275
Prison/Penitentiary	236	84.43	186.14	13.10	28.88	57-133	126-294
<u>Region</u>							
San Diego	385	83.89	184.94	10.09	22.24	58-124	128-274
Los Angeles	141	76.30	168.21	7.60	16.76	59-106	130-234
Phoenix/Tucson	114	83.97	185.11	9.80	21.61	64-121	142-266
Dallas/Fort Worth	157	85.66	188.85	12.28	27.07	62-122	137-268
Houston/Galveston	329	86.37	190.42	16.01	35.30	56-144	124-318
New Orleans/Baton Rouge	106	83.64	184.41	12.24	26.99	59-124	131-273
Miami/Fort Lauderdale	174	82.37	181.59	10.90	24.03	59-117	130-258
Atlanta	147	83.23	183.49	13.11	28.90	56-130	124-288
Washington D.C.	242	80.90	178.36	9.92	21.87	57-108	126-239
New York	304	79.65	175.61	10.03	22.12	59-117	131-258
Detroit	80	83.31	183.66	10.72	23.64	57-116	126-255
Minneapolis/St. Paul	209	86.20	190.04	10.70	23.59	65-131	144-289
Kansas City	151	84.95	187.29	13.84	30.51	60-135	132-298
Denver	178	81.66	180.02	10.90	24.03	58-111	128-244
Helena/Butte	106	84.83	187.03	12.61	27.81	57-133	125-294
Spokane	51	87.12	192.08	11.85	26.12	63-126	139-278
Portland	117	85.42	188.32	11.93	26.30	61-125	135-275
<u>Ethnic Background</u>							
Black	281	84.00	185.20	13.64	30.08	57-144	126-318
Mexican American	98	82.09	180.97	12.85	28.33	57-131	125-289
Puerto Rican/Cuban	27	79.78	175.89	10.37	22.86	60-98	132-215
American Indian	42	85.23	187.90	16.85	37.15	56-128	124-282
European, Northern	240	84.00	185.19	11.57	25.52	57-140	125-308
European, Eastern	141	82.40	181.66	10.66	23.49	59-111	130-245
European, Southern	205	80.97	178.52	9.97	21.97	60-108	133-238
European, Western	1492	83.22	183.47	11.92	26.28	56-144	124-318
White American	305	84.84	187.04	11.04	24.35	59-124	131-274

MEASUREMENT HEIGHT

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2989	1781.16	70.12	57.85	2.28	1559-2067	61.38-81.38
Experienced Officers	2035	1785.06	70.28	58.49	2.30	1559-2067	61.38-81.38
Recruits	954	1772.83	69.80	55.55	2.19	1597-1964	62.87-77.32
<u>Agency</u>							
Police	2058	1781.25	70.13	55.79	2.20	1597-2067	62.87-81.38
Sheriff	519	1781.18	70.13	63.60	2.50	1644-2022	64.72-79.61
Highway Patrol/State Police	176	1794.51	70.65	51.50	2.03	1651-1944	65.00-76.54
Prison/Penitentiary	236	1770.33	69.70	64.14	2.53	1559-1922	61.38-78.03
<u>Region</u>							
San Diego	385	1793.96	70.63	57.97	2.28	1663-1940	65.47-76.38
Los Angeles	142	1776.48	69.94	49.97	1.96	1677-1945	66.02-76.57
Phoenix/Tucson	114	1782.96	70.20	65.71	2.59	1668-1949	65.67-76.73
Dallas/Fort Worth	157	1793.36	70.60	56.70	2.23	1673-1951	65.87-76.81
Houston/Galveston	329	1770.60	69.71	64.20	2.53	1626-2067	64.02-81.38
New Orleans/Baton Rouge	106	1776.28	69.93	62.11	2.45	1651-1956	65.00-77.01
Miami/Fort Lauderdale	174	1775.29	69.89	61.52	2.42	1597-1917	62.87-75.47
Atlanta	147	1776.00	69.92	53.63	2.11	1635-1952	66.37-76.85
Washington D.C.	242	1779.91	70.08	58.68	2.31	1630-1964	64.17-77.32
New York	304	1767.27	69.58	47.58	1.87	1668-1912	65.67-75.28
Detroit	80	1787.14	70.36	48.09	1.89	1685-1897	66.34-74.68
Minneapolis/St. Paul	210	1787.56	70.38	51.31	2.02	1675-1954	65.94-76.93
Kansas City	151	1779.39	70.05	57.69	2.27	1654-1940	65.12-76.38
Denver	178	1780.15	70.08	56.50	2.22	1670-1946	65.75-76.61
Helena/Butte	106	1779.71	70.07	62.01	2.44	1559-1936	61.38-76.22
Spokane	51	1804.12	71.03	46.47	1.83	1708-1918	67.24-75.51
Portland	117	1794.04	70.63	60.05	2.36	1680-1976	66.14-77.80
<u>Ethnic Background</u>							
Black	281	1783.07	70.20	57.91	2.28	1631-2009	64.21-79.02
Mexican American	98	1734.99	68.31	44.35	1.75	1616-1860	64.02-73.23
Puerto Rican/Cuban	27	1745.11	68.71	40.02	1.58	1682-1839	66.22-72.40
American Indian	42	1767.00	69.57	63.67	2.51	1653-1997	65.08-78.62
European, Northern	240	1790.03	70.47	61.32	2.41	1638-2022	64.49-79.61
European, Eastern	141	1782.40	70.17	51.95	2.05	1632-1923	64.25-75.71
European, Southern	205	1756.86	69.17	49.81	1.96	1658-1956	65.28-77.01
European, Western	1491	1783.41	70.21	56.32	2.22	1559-1982	61.38-78.03
White American	305	1793.95	70.63	58.27	2.29	1630-2067	64.17-81.38

MEASUREMENT FUNCTIONAL REACH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2987	829.70	32.67	42.00	1.65	705–1012	27.76–39.84
Experienced Officers	2034	833.04	32.80	41.60	1.64	705–1012	27.76–39.84
Recruits	953	822.55	32.38	41.96	1.65	705–1002	27.76–39.45
<u>Agency</u>							
Police	2057	828.20	32.61	41.87	1.65	705–1002	27.76–39.45
Sheriff	519	832.33	32.77	43.24	1.70	732–974	28.82–38.35
Highway Patrol/State Police	176	831.47	32.74	37.57	1.48	733–968	28.86–38.11
Prison/Penitentiary	235	835.63	32.90	42.67	1.68	705–1012	27.76–39.84
<u>Region</u>							
San Diego	385	826.80	32.55	36.78	1.45	732–975	28.82–38.39
Los Angeles	141	817.11	32.17	38.47	1.51	710–942	27.95–37.09
Phoenix/Tucson	114	835.13	32.88	42.14	1.66	735–932	28.94–36.69
Dallas/Fort Worth	157	817.58	32.19	39.45	1.55	705–924	27.76–36.38
Houston/Galveston	329	838.25	33.00	45.12	1.78	705–1012	27.76–39.84
New Orleans/Baton Rouge	106	825.69	32.51	39.45	1.55	740–961	29.13–37.83
Miami/Fort Lauderdale	174	840.36	33.08	43.52	1.71	721–974	28.39–38.35
Atlanta	147	827.09	32.56	40.13	1.58	715–958	28.15–37.72
Washington D.C.	242	826.07	32.52	39.58	1.56	711–968	27.99–38.11
New York	304	806.96	31.77	37.02	1.46	705–896	27.76–35.28
Detroit	80	817.43	32.18	34.53	1.36	735–895	28.94–35.24
Minneapolis/St. Paul	210	855.95	33.70	39.17	1.54	736–974	28.98–38.35
Kansas City	151	834.11	32.84	42.70	1.68	741–949	29.17–37.36
Denver	177	829.49	32.66	37.49	1.48	725–923	28.54–36.34
Helena/Butte	106	850.31	33.48	43.15	1.70	752–968	29.61–38.11
Spokane	51	861.35	33.91	35.93	1.41	773–933	30.43–36.73
Portland	117	822.47	32.38	39.02	1.54	733–952	28.86–37.48
<u>Ethnic Background</u>							
Black	281	845.37	33.28	44.47	1.75	735–1002	28.94–39.45
Mexican American	98	823.31	32.41	42.86	1.69	705–927	27.76–36.50
Puerto Rican/Cuban	27	804.96	31.69	35.20	1.39	746–886	29.37–34.88
American Indian	42	821.60	32.35	41.32	1.63	727–935	28.62–36.81
European, Northern	240	837.83	32.99	43.98	1.73	732–974	28.82–38.35
European, Eastern	141	828.26	32.61	39.63	1.56	705–957	27.76–37.68
European, Southern	205	810.83	31.91	36.49	1.44	720–916	28.35–36.06
European, Western	1489	830.58	32.70	41.52	1.63	705–1012	27.76–39.84
White American	304	824.38	32.46	35.90	1.41	711–921	27.99–36.26

MEASUREMENT CHEST BREADTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2984	346.43	13.64	26.35	1.04	271-482	10.67-18.98
Experienced Officers	2030	350.50	13.80	26.83	1.06	273-482	10.75-18.98
Recruits	954	337.78	13.30	23.03	0.91	271-419	10.67-16.50
<u>Agency</u>							
Police	2054	345.72	13.61	25.38	1.00	271-482	10.67-18.98
Sheriff	519	348.26	13.71	30.23	1.19	283-471	11.14-18.54
Highway Patrol/State Police	176	345.42	13.60	24.57	0.96	286-419	11.26-16.50
Prison/Penitentiary	235	349.34	13.75	26.60	1.05	283-435	11.14-17.13
<u>Region</u>							
San Diego	384	353.64	13.92	23.29	0.92	296-430	11.65-16.93
Los Angeles	141	332.93	13.11	17.92	0.71	292-377	11.50-14.84
Phoenix/Tucson	114	350.54	13.80	21.96	0.86	306-432	12.05-17.01
Dallas/Fort Worth	155	352.41	13.87	25.81	1.02	295-445	11.61-17.52
Houston/Galveston	329	352.65	13.88	33.20	1.31	283-471	11.14-18.54
New Orleans/Baton Rouge	106	333.66	13.14	25.75	1.01	271-405	10.67-15.94
Miami/Fort Lauderdale	174	346.83	13.65	22.33	0.88	301-417	11.85-16.42
Atlanta	146	341.82	13.46	28.04	1.10	273-408	10.75-16.06
Washington D.C.	242	340.81	13.42	22.38	0.88	283-419	11.14-16.50
New York	304	339.26	13.36	23.36	0.92	281-426	11.06-16.77
Detroit	80	340.21	13.39	24.80	0.98	281-399	11.06-15.71
Minneapolis/St. Paul	208	355.51	14.00	25.02	0.98	307-482	12.09-18.98
Kansas City	151	346.70	13.65	27.11	1.07	286-469	11.26-18.46
Denver	177	342.11	13.47	26.47	1.04	291-426	11.46-16.77
Helena/Butte	106	352.82	13.89	26.99	1.06	283-435	11.14-17.13
Spokane	51	342.08	13.47	26.50	1.04	294-424	11.57-16.69
Portland	117	346.97	13.66	24.99	0.98	296-424	11.65-16.69
<u>Ethnic Background</u>							
Black	281	339.69	13.37	25.20	0.99	273-429	10.75-16.89
Mexican American	97	351.72	13.85	31.16	1.23	294-482	11.57-18.98
Puerto Rican/Cuban	27	340.89	13.42	18.32	0.72	295-374	11.61-14.72
American Indian	42	357.93	14.09	36.91	1.45	288-466	11.34-18.35
European, Northern	240	347.96	13.70	25.48	1.00	294-464	11.57-18.27
European, Eastern	140	341.29	13.44	24.09	0.95	283-419	11.14-16.50
European, Southern	205	343.43	13.52	24.00	0.94	294-410	11.57-16.14
European, Western	1490	346.36	13.64	25.99	1.02	271-469	10.67-18.46
White American	303	352.21	13.87	25.97	1.02	273-430	10.75-16.93

MEASUREMENT CHEST CIRCUMFERENCE

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2990	1021.56	40.22	79.00	3.11	781-1391	30.75-54.76
Experienced Officers	2036	1037.20	40.83	79.99	3.15	806-1391	31.73-54.76
Recruits	954	988.18	38.90	65.34	2.57	781-1198	30.75-47.17
<u>Agency</u>							
Police	2058	1016.92	40.04	74.67	2.94	790-1391	31.10-54.76
Sheriff	520	1033.72	40.70	90.68	3.57	781-1366	30.75-53.78
Highway Patrol/State Police	176	1015.26	39.97	71.22	2.80	868-1224	34.17-48.19
Prison/Penitentiary	236	1039.94	40.94	87.51	3.45	836-1361	32.91-53.58
<u>Region</u>							
San Diego	385	1030.78	40.58	64.99	2.56	853-1244	33.58-48.98
Los Angeles	141	983.38	38.72	49.72	1.96	862-1133	33.94-44.61
Phoenix/Tucson	114	1033.01	40.67	62.32	2.45	858-1265	33.78-49.80
Dallas/Fort Worth	157	1044.78	41.13	77.44	3.05	856-1299	33.70-51.14
Houston/Galveston	329	1033.58	40.69	103.05	4.06	818-1366	32.20-53.78
New Orleans/Baton Rouge	106	997.06	39.25	80.25	3.16	848-1273	33.39-50.12
Miami/Fort Lauderdale	174	1018.68	40.11	68.80	2.71	847-1198	33.35-47.17
Atlanta	147	1020.66	40.18	89.97	3.54	806-1291	31.73-50.83
Washington D.C.	242	991.67	39.04	66.61	2.62	790-1182	31.10-46.54
New York	304	989.69	38.96	65.57	2.58	850-1260	33.46-49.61
Detroit	79	1007.11	39.65	76.82	3.02	824-1169	32.44-46.02
Minneapolis/St. Paul	209	1051.76	41.41	72.62	2.86	904-1391	35.59-54.76
Kansas City	151	1038.50	40.89	84.51	3.33	842-1367	33.15-53.82
Denver	178	1021.33	40.21	86.33	3.40	702-1151	27.64-45.31
Helena/Butte	106	1047.08	41.22	82.75	3.26	874-1322	34.41-52.05
Spokane	51	1053.39	41.47	85.58	3.37	781-1238	30.75-48.74
Portland	117	1030.66	40.58	70.90	2.79	888-1240	34.96-48.82
<u>Ethnic Background</u>							
Black	281	992.24	39.06	79.34	3.12	790-1315	31.10-51.77
Mexican American	98	1042.82	41.06	94.87	3.73	836-1391	32.91-54.76
Puerto Rican/Cuban	27	1000.19	39.38	61.82	2.43	904-1134	35.59-44.65
American Indian	42	1048.48	41.28	114.58	4.51	806-1334	31.73-52.52
European, Northern	240	1033.76	40.70	75.37	2.97	851-1322	33.50-52.05
European, Eastern	141	1010.72	39.79	69.59	2.74	858-1219	33.78-47.99
European, Southern	205	1008.56	39.71	66.67	2.62	851-1171	33.50-46.10
European, Western	1491	1023.34	40.29	77.82	3.06	810-1367	31.89-53.82
White American	305	1031.04	40.59	76.17	3.00	781-1273	30.75-50.12

MEASUREMENT WAIST CIRCUMFERENCE

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2988	906.12	35.67	94.58	3.72	675-1378	26.57-54.25
Experienced Officers	2034	926.97	36.49	95.51	3.76	679-1378	26.73-54.24
Recruits	954	861.64	33.92	75.24	2.96	675-1152	26.57-43.35
<u>Agency</u>							
Police	2056	898.06	35.36	88.56	3.49	675-1378	26.57-54.25
Sheriff	520	926.98	36.50	106.76	4.20	679-1332	26.73-52.44
Highway Patrol/State Police	176	888.09	34.96	85.64	3.37	696-1130	27.40-44.49
Prison/Penitentiary	236	943.73	37.15	105.65	4.16	692-1340	27.24-52.76
<u>Region</u>							
San Diego	384	904.71	35.62	74.56	2.94	738-1170	29.06-46.06
Los Angeles	141	832.89	32.79	53.35	2.10	705-1006	27.76-39.61
Phoenix/Tucson	114	916.25	36.07	73.99	2.91	740-1198	29.13-47.17
Dallas/Fort Worth	156	934.17	36.78	90.89	3.58	748-1180	29.45-46.46
Houston/Galveston	329	943.95	37.16	123.41	4.86	679-1340	26.73-52.76
New Orleans/Baton Rouge	106	905.95	35.67	89.86	3.54	706-1152	27.80-45.35
Miami/Fort Lauderdale	174	892.26	35.13	77.35	3.05	720-1123	28.35-44.21
Atlanta	147	914.63	36.01	107.91	4.25	700-1291	27.56-50.83
Washington D.C.	242	860.93	33.89	77.70	3.06	675-1074	26.57-42.28
New York	304	873.71	34.40	80.02	3.15	696-1233	27.40-48.54
Detroit	79	894.42	35.21	72.36	2.85	743-1050	29.25-41.34
Minneapolis/St. Paul	209	938.20	36.94	85.54	3.37	760-1378	29.92-54.25
Kansas City	151	934.94	36.81	101.55	4.00	715-1220	28.15-48.03
Denver	178	896.97	35.31	86.33	3.40	702-1151	27.64-45.31
Helena/Butte	106	951.60	37.46	107.66	4.24	692-1292	27.24-50.87
Spokane	51	928.61	36.56	96.42	3.80	750-1184	29.53-46.61
Portland	117	909.33	35.80	87.31	3.44	696-1144	27.40-45.04
<u>Ethnic Background</u>							
Black	280	872.71	34.36	103.47	4.07	675-1284	26.57-60.55
Mexican American	98	923.72	36.37	112.74	4.44	718-1378	28.27-54.25
Puerto Rican/Cuban	27	885.11	34.85	65.94	2.60	774-1043	30.47-41.06
American Indian	42	933.79	36.76	139.16	5.48	682-1332	26.85-52.44
European, Northern	240	913.42	35.96	91.28	3.59	716-1220	38.19-48.03
European, Eastern	141	893.80	35.19	82.42	3.24	700-1150	27.56-45.28
European, Southern	205	892.39	35.13	77.15	3.04	733-1124	28.86-44.25
European, Western	1491	910.20	35.83	94.36	3.71	679-1292	36.73-50.87
White American	304	917.70	36.13	86.92	3.42	706-1203	27.80-47.36

MEASUREMENT WAIST FRONT

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2983	413.28	16.27	26.92	1.06	304–590	11.97–23.23
Experienced Officers	2029	417.81	16.45	27.75	1.09	304–590	11.97–23.23
Recruits	954	403.65	15.89	22.16	0.87	340–488	13.39–19.21
<u>Agency</u>							
Police	2055	411.91	16.22	25.87	1.02	304–533	11.97–20.98
Sheriff	520	415.81	16.37	28.59	1.13	341–521	13.43–20.51
Highway Patrol/State Police	176	409.95	16.14	23.37	0.92	358–491	14.09–19.33
Prison/Penitentiary	232	422.35	16.63	31.94	1.26	351–590	13.82–23.23
<u>Region</u>							
San Diego	384	418.34	16.47	24.12	0.95	363–513	14.29–20.20
Los Angeles	141	401.81	15.82	19.51	0.77	341–458	13.43–18.03
Phoenix/Tucson	114	413.21	16.27	25.64	1.01	362–500	14.25–19.68
Dallas/Fort Worth	154	424.45	16.71	28.00	1.10	353–500	13.90–19.68
Houston/Galveston	329	413.83	16.29	32.59	1.28	340–523	13.39–20.59
New Orleans/Baton Rouge	106	409.27	16.11	25.06	0.99	340–474	13.39–18.66
Miami/Fort Lauderdale	174	408.59	16.09	26.17	1.03	344–492	13.54–19.37
Atlanta	145	420.27	16.55	30.97	1.22	342–590	13.46–23.23
Washington D.C.	242	404.16	15.91	23.48	0.92	342–472	13.46–18.58
New York	304	407.39	16.04	22.84	0.90	356–513	14.02–20.20
Detroit	80	416.85	16.41	23.52	0.93	365–474	14.37–18.66
Minneapolis/St. Paul	209	416.92	16.41	26.97	1.06	361–533	14.21–20.98
Kansas City	151	417.88	16.45	27.55	1.08	368–495	14.49–19.49
Denver	176	412.17	16.23	26.08	1.03	362–512	14.25–20.16
Helena/Butte	106	420.08	16.54	26.65	1.05	351–492	13.82–19.37
Spokane	51	413.00	16.26	26.06	1.03	361–482	14.21–18.98
Portland	117	411.28	16.19	25.88	1.02	304–477	11.97–18.78
<u>Ethnic Background</u>							
Black	281	405.88	15.98	25.07	0.99	342–488	13.46–19.21
Mexican American	97	413.25	16.27	29.79	1.17	341–533	13.43–20.98
Puerto Rican/Cuban	27	403.93	15.90	16.18	0.64	375–445	14.76–17.52
American Indian	42	416.36	16.39	33.54	1.32	341–483	13.43–19.02
European, Northern	239	413.82	16.29	25.75	1.01	350–521	13.78–20.51
European, Eastern	141	410.62	16.17	27.26	1.07	342–488	13.46–19.21
European, Southern	204	407.74	16.05	22.47	0.88	356–478	14.02–18.82
European, Western	1489	414.19	16.31	27.12	1.07	304–590	11.97–23.23
White American	303	419.15	16.50	25.94	1.02	363–513	14.29–20.20

MEASUREMENT HEAD CIRCUMFERENCE

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2985	574.96	22.64	15.77	0.62	524-631	20.63-24.84
Experienced Officers	2034	576.87	22.71	15.59	0.61	529-631	20.83-24.84
Recruits	951	570.88	22.48	15.38	0.61	524-624	20.63-26.57
<u>Agency</u>							
Police	2052	574.91	22.63	15.54	0.61	524-631	20.63-24.84
Sheriff	521	575.84	22.67	16.25	0.64	528-624	20.79-24.57
Highway Patrol/State Police	176	574.35	22.61	15.35	0.60	532-627	20.94-24.68
Prison/Penitentiary	236	573.98	22.60	16.87	0.66	529-630	20.83-24.80
<u>Region</u>							
San Diego	384	579.21	22.80	14.76	0.58	537-620	21.14-24.41
Los Angeles	142	567.35	22.35	14.61	0.58	531-605	20.91-23.82
Phoenix/Tucson	114	576.92	22.71	16.08	0.63	533-622	20.98-24.49
Dallas/Fort Worth	157	578.15	22.76	13.95	0.55	542-611	21.34-24.06
Houston/Galveston	329	575.77	22.67	16.07	0.63	533-630	20.98-24.80
New Orleans/Baton Rouge	106	571.97	22.52	16.34	0.64	532-624	20.94-24.57
Miami/Fort Lauderdale	171	574.54	22.62	16.35	0.64	524-613	20.63-24.13
Atlanta	147	576.05	22.68	16.18	0.64	538-631	21.28-24.84
Washington D.C.	240	573.08	22.56	15.64	0.62	528-608	20.79-23.94
New York	303	568.96	22.40	14.54	0.57	532-611	20.94-24.06
Detroit	80	576.16	22.68	15.22	0.60	540-624	21.26-24.57
Minneapolis/St. Paul	210	578.33	22.77	14.89	0.59	529-626	21.22-24.65
Kansas City	150	573.07	22.56	14.74	0.58	539-626	21.22-24.25
Denver	178	574.01	22.60	13.90	0.55	536-609	21.20-23.98
Helena/Butte	106	575.83	22.67	17.88	0.70	529-617	20.83-24.29
Spokane	51	577.94	22.75	17.14	0.67	534-614	21.02-24.17
Portland	117	577.80	22.75	16.85	0.66	535-627	21.06-24.68
<u>Ethnic Background</u>							
Black	279	579.04	22.80	16.69	0.66	535-624	21.06-24.57
Mexican American	98	570.79	22.47	16.04	0.63	536-628	21.10-24.72
Puerto Rican/Cuban	27	570.70	22.47	18.00	0.71	542-609	21.34-23.98
American Indian	42	575.05	22.64	17.54	0.69	538-610	21.18-24.02
European, Northern	241	575.48	22.66	15.29	0.60	536-626	21.10-24.65
European, Eastern	141	571.74	22.51	15.06	0.59	534-616	21.02-24.25
European, Southern	205	571.44	22.50	15.35	0.60	532-616	20.94-24.25
European, Western	1488	574.54	22.62	15.41	0.61	528-631	20.79-24.84
White American	305	578.52	22.78	15.25	0.60	530-620	20.87-24.41

MEASUREMENT HAND CIRCUMFERENCE

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2985	214.27	8.44	10.21	0.40	180–278	7.09–10.94
Experienced Officers	2033	215.71	8.49	10.15	0.40	182–278	7.17–10.94
Recruits	952	211.18	8.31	9.65	0.38	180–263	7.09–9.57
<u>Agency</u>							
Police	2053	213.74	8.41	10.12	0.40	182–278	7.17–10.94
Sheriff	521	215.03	8.47	10.55	0.42	180–250	7.09–9.84
Highway Patrol/State Police	176	215.40	8.48	10.09	0.40	188–243	7.40–9.57
Prison/Penitentiary	235	216.40	8.52	9.92	0.39	187–240	7.36–9.45
<u>Region</u>							
San Diego	385	214.81	8.46	8.99	0.35	192–239	7.56–9.41
Los Angeles	140	210.07	8.27	9.47	0.37	188–238	7.40–9.37
Phoenix/Tucson	114	214.92	8.46	9.84	0.39	190–236	7.48–9.29
Dallas/Fort Worth	156	216.92	8.54	11.25	0.44	182–246	7.17–9.69
Houston/Galveston	329	215.83	8.50	10.48	0.41	188–250	7.40–9.84
New Orleans/Baton Rouge	106	213.08	8.39	10.09	0.40	186–235	7.32–9.25
Miami/Fort Lauderdale	174	214.22	8.43	9.22	0.36	185–235	7.28–9.25
Atlanta	145	212.01	8.35	10.30	0.41	188–250	7.40–9.84
Washington D.C.	241	212.49	8.37	9.88	0.39	180–243	7.09–9.57
New York	304	209.72	8.26	9.47	0.37	182–241	7.17–9.49
Detroit	80	214.79	8.46	10.22	0.40	194–239	7.64–9.41
Minneapolis/St. Paul	210	219.65	8.65	10.36	0.41	196–278	7.72–10.94
Kansas City	151	214.48	8.44	9.41	0.37	194–248	7.64–9.76
Denver	177	212.48	8.37	9.62	0.38	187–237	7.36–9.33
Helena/Butte	106	217.91	8.58	9.41	0.37	194–240	7.64–9.45
Spokane	51	221.59	8.72	9.83	0.39	189–247	7.44–9.72
Portland	116	214.33	8.44	9.64	0.38	190–242	7.48–9.53
<u>Ethnic Background</u>							
Black	278	215.64	8.49	10.88	0.43	185–250	7.28–9.84
Mexican American	97	211.02	8.31	9.14	0.36	188–237	7.40–9.33
Puerto Rican/Cuban	27	207.67	8.18	10.12	0.40	183–230	7.20–9.06
American Indian	42	214.33	8.44	12.15	0.48	189–250	7.44–9.84
European, Northern	241	215.93	8.50	9.55	0.38	187–241	7.36–9.49
European, Eastern	141	213.98	8.42	11.57	0.46	188–278	7.40–10.94
European, Southern	205	212.22	8.36	9.21	0.36	189–237	7.44–9.33
European, Western	1489	214.11	8.43	10.17	0.40	180–248	7.09–9.76
White American	305	215.55	8.49	9.34	0.37	186–241	7.32–9.49

MEASUREMENT SHOULDER HEIGHT SITTING

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2988	615.19	24.22	29.68	1.17	515-719	20.28-28.31
Experienced Officers	2032	617.99	24.33	30.04	1.18	517-719	20.35-28.31
Recruits	956	609.24	23.99	27.98	1.10	515-694	20.28-27.32
<u>Agency</u>							
Police	2057	614.68	24.20	29.30	1.15	515-716	20.28-28.19
Sheriff	520	613.89	24.17	30.75	1.21	520-719	20.47-28.31
Highway Patrol/State Police	176	621.45	24.47	30.08	1.18	525-717	20.67-28.23
Prison/Penitentiary	235	617.84	24.32	29.56	1.16	543-702	21.38-27.64
<u>Region</u>							
San Diego	385	618.66	24.36	28.75	1.13	535-705	21.06-27.76
Los Angeles	142	608.89	23.97	24.47	0.96	556-676	21.89-26.61
Phoenix/Tucson	114	612.70	24.12	28.67	1.13	550-684	21.65-26.93
Dallas/Fort Worth	157	629.01	24.76	27.61	1.09	549-701	21.61-27.60
Houston/Galveston	329	610.62	24.04	28.76	1.13	526-719	20.71-28.31
New Orleans/Baton Rouge	106	607.98	23.94	31.91	1.26	520-680	20.47-26.77
Miami/Fort Lauderdale	173	614.22	24.18	27.31	1.08	553-695	21.77-27.36
Atlanta	146	610.99	24.05	30.19	1.19	540-702	21.26-27.64
Washington D.C.	240	603.08	23.74	32.78	1.29	517-604	20.35-27.32
New York	304	610.95	24.05	25.96	1.02	528-679	20.79-26.73
Detroit	80	609.58	24.00	30.06	1.18	557-677	21.93-26.65
Minneapolis/St. Paul	209	621.33	24.46	27.98	1.10	537-709	21.14-27.91
Kansas City	151	620.51	24.43	28.88	1.14	552-699	21.73-27.52
Denver	178	613.80	24.17	28.26	1.11	515-694	20.28-27.32
Helena/Butte	106	638.12	25.12	28.70	1.13	566-716	22.28-28.19
Spokane	51	622.37	24.50	28.11	1.11	555-689	21.85-27.13
Portland	117	621.39	24.46	29.79	1.17	559-717	22.01-28.23
<u>Ethnic Background</u>							
Black	279	592.09	23.31	29.63	1.17	517-677	31.06-39.17
Mexican American	98	605.94	23.86	26.86	1.06	515-663	20.28-26.10
Puerto Rican/Cuban	26	600.88	23.66	19.72	0.78	567-638	22.32-25.12
American Indian	42	620.48	24.43	33.33	1.31	520-678	20.47-26.69
European, Northern	240	622.03	24.49	31.36	1.23	549-719	21.61-28.31
European, Eastern	140	616.74	24.28	26.35	1.04	528-677	20.79-26.65
European, Southern	205	607.39	23.91	26.28	1.03	526-673	20.91-26.50
European, Western	1493	618.44	24.35	28.20	1.11	526-717	20.71-28.23
White American	305	621.54	24.47	28.05	1.10	528-705	20.79-27.76

MEASUREMENT SITTING HEIGHT

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2984	921.80	36.29	34.96	1.36	789–1030	31.06–40.55
Experienced Officers	2030	925.14	36.42	34.96	1.38	789–1030	31.06–40.55
Recruits	954	914.70	36.01	32.24	1.27	804–1009	31.65–39.72
<u>Agency</u>							
Police	2052	922.64	36.32	33.87	1.33	789–1030	31.06–40.55
Sheriff	520	917.69	36.13	36.84	1.45	795–1028	31.30–40.47
Highway Patrol/State Police	176	926.76	36.49	31.65	1.25	835–1003	32.87–39.49
Prison/Penitentiary	236	919.85	36.21	35.23	1.39	830–1025	32.68–40.35
<u>Region</u>							
San Diego	383	936.18	36.86	31.65	1.25	837–1020	32.95–40.16
Los Angeles	142	922.65	36.32	27.10	1.07	858–999	33.78–39.33
Phoenix/Tucson	114	927.10	36.50	32.09	1.26	840–1005	33.07–39.57
Dallas/Fort Worth	156	938.99	36.97	28.76	1.13	854–1003	33.62–39.49
Houston/Galveston	329	902.86	35.55	34.37	1.35	806–1028	31.73–40.47
New Orleans/Baton Rouge	106	904.13	35.60	37.26	1.47	795–1012	31.30–39.84
Miami/Fort Lauderdale	173	920.67	36.25	32.31	1.27	833–1004	32.80–39.53
Atlanta	146	922.44	36.32	35.16	1.38	836–1025	32.91–40.35
Washington D.C.	241	902.39	35.53	36.33	1.43	789–1001	31.06–39.41
New York	304	915.77	36.05	30.45	1.20	819–1009	32.24–39.72
Detroit	80	927.15	36.50	31.46	1.24	860–1006	33.86–39.61
Minneapolis/St. Paul	209	926.79	36.49	28.93	1.14	853–1018	33.58–40.08
Kansas City	150	929.17	36.58	31.49	1.24	848–1030	33.39–40.55
Denver	177	922.75	36.33	32.99	1.30	840–1018	33.07–40.08
Helena/Butte	106	929.32	36.59	33.82	1.33	830–1014	32.68–39.92
Spokane	51	933.10	36.74	28.26	1.11	872–1005	34.33–39.57
Portland	117	936.25	36.86	32.10	1.26	869–1014	34.21–39.92
<u>Ethnic Background</u>							
Black	281	891.93	35.12	35.32	1.39	789–995	31.06–39.17
Mexican American	97	903.91	35.59	29.43	1.16	835–972	32.87–38.27
Puerto Rican/Cuban	27	903.22	35.56	25.39	1.00	854–957	33.62–37.68
American Indian	42	917.86	36.14	41.29	1.63	795–987	31.30–38.86
European, Northern	240	930.73	36.64	32.61	1.28	853–1028	33.58–40.47
European, Eastern	140	924.26	36.39	30.28	1.19	826–1006	32.52–39.61
European, Southern	205	912.86	35.94	28.67	1.13	814–1012	32.05–39.84
European, Western	1489	924.92	36.41	31.82	1.25	828–1025	32.60–40.35
White American	303	935.46	36.83	33.94	1.34	797–1020	31.38–40.16

MEASUREMENT KNEE HEIGHT SITTING

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2984	559.15	22.01	25.26	0.99	468-653	18.43-25.71
Experienced Officers	2028	560.33	22.06	25.74	1.01	468-653	18.43-25.71
Recruits	956	556.64	21.91	24.04	0.95	498-638	19.61-25.12
<u>Agency</u>							
Police	2053	560.01	22.05	24.43	0.96	489-653	19.25-25.71
Sheriff	519	557.60	21.95	27.08	1.07	485-636	19.09-25.04
Highway Patrol/State Police	176	563.09	22.17	23.63	0.93	499-638	19.65-25.12
Prison/Penitentiary	236	552.15	21.74	27.86	1.10	468-650	18.43-25.59
<u>Region</u>							
San Diego	385	567.43	22.34	24.31	0.96	489-625	19.25-24.61
Los Angeles	142	559.58	22.03	22.39	0.88	508-638	20.00-25.12
Phoenix/Tucson	114	561.12	22.09	26.61	1.05	504-629	19.84-24.76
Dallas/Fort Worth	156	563.42	22.18	24.07	0.95	506-632	19.92-24.88
Houston/Galveston	329	548.47	21.59	26.18	1.03	470-650	18.50-25.59
New Orleans/Baton Rouge	106	548.94	21.61	25.10	0.99	493-599	19.41-23.58
Miami/Fort Lauderdale	174	560.79	22.08	25.32	1.00	501-628	19.72-24.72
Atlanta	147	561.52	22.11	24.54	0.97	496-630	19.53-24.80
Washington D.C.	239	559.67	22.03	25.72	1.01	499-653	19.65-25.71
New York	304	555.05	21.85	21.31	0.84	501-621	19.72-24.45
Detroit	80	566.94	22.32	22.29	0.88	516-628	20.31-24.72
Minneapolis/St. Paul	209	560.08	22.08	22.24	0.88	507-609	19.96-23.98
Kansas City	151	561.53	22.11	25.80	1.02	506-633	19.92-24.92
Denver	178	651.37	22.10	23.30	0.92	510-633	20.08-24.92
Helena/Butte	106	543.96	21.42	28.01	1.10	468-631	18.43-24.84
Spokane	51	557.53	21.95	22.18	0.87	520-607	20.47-23.90
Portland	113	566.96	22.32	25.64	1.01	491-638	19.33-25.12
<u>Ethnic Background</u>							
Black	279	573.27	22.57	24.31	0.96	518-653	20.39-25.71
Mexican American	98	543.81	21.41	20.92	0.82	493-590	19.41-23.23
Puerto Rican/Cuban	27	551.19	21.70	18.04	0.71	520-584	20.47-22.99
American Indian	42	552.81	21.76	24.54	0.97	503-635	19.80-25.00
European, Northern	239	559.84	22.04	25.78	1.02	492-630	19.37-24.80
European, Eastern	141	556.89	21.92	22.73	0.89	501-612	19.72-24.09
European, Southern	205	550.78	21.68	22.37	0.88	504-617	19.84-24.29
European, Western	1489	557.55	21.95	24.83	0.98	468-650	18.43-25.59
White American	305	565.53	22.27	24.47	0.96	489-625	19.25-24.61

MEASUREMENT BUTTOCK KNEE LENGTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2988	615.03	24.21	27.12	1.07	528–724	20.79–28.50
Experienced Officers	2033	616.56	24.27	27.36	1.08	528–724	20.79–28.50
Recruits	955	611.76	24.08	26.32	1.04	544–699	21.42–27.52
<u>Agency</u>							
Police	2057	614.59	24.20	26.63	1.05	531–724	20.91–28.50
Sheriff	519	616.69	24.28	28.90	1.14	533–718	20.98–28.27
Highway Patrol/State Police	176	616.86	24.29	25.24	0.99	561–700	22.09–27.56
Prison/Penitentiary	236	613.75	24.16	28.43	1.12	528–693	20.79–27.28
<u>Region</u>							
San Diego	385	618.30	24.34	25.85	1.02	553–702	21.77–27.64
Los Angeles	142	606.66	23.88	23.87	0.94	557–672	21.93–26.46
Phoenix/Tucson	113	615.80	24.24	28.68	1.13	536–692	21.10–27.24
Dallas/Fort Worth	157	617.62	24.32	25.81	1.02	565–683	22.24–26.89
Houston/Galveston	329	613.44	24.15	31.25	1.23	531–724	20.91–28.50
New Orleans/Baton Rouge	106	610.11	24.02	27.03	1.06	555–675	21.85–26.57
Miami/Fort Lauderdale	174	612.49	24.11	26.47	1.04	544–678	21.42–26.69
Atlanta	147	617.18	24.30	25.35	1.00	556–695	21.89–27.36
Washington D.C.	241	621.93	24.45	28.61	1.13	544–706	21.42–27.80
New York	304	608.79	23.97	23.88	0.94	552–669	21.73–26.34
Detroit	79	621.06	24.45	22.69	0.89	575–698	22.64–27.48
Minneapolis/St. Paul	209	618.96	24.37	25.34	1.00	561–692	22.09–27.24
Kansas City	151	614.50	24.19	27.11	1.07	562–716	22.13–28.19
Denver	178	613.46	24.15	24.77	0.98	560–699	22.05–27.52
Helena/Butte	106	610.71	24.04	28.71	1.13	528–684	20.79–26.93
Spokane	51	626.75	24.67	25.03	0.99	557–677	21.93–26.65
Portland	117	615.00	24.21	30.19	1.19	533–700	20.98–27.56
<u>Ethnic Background</u>							
Black	280	636.68	25.07	28.19	1.11	573–724	22.56–28.50
Mexican American	97	599.87	23.62	21.33	0.84	557–656	21.93–25.83
Puerto Rican/Cuban	27	602.44	23.72	23.22	0.91	566–659	22.28–25.94
American Indian	42	610.38	24.03	30.76	1.21	536–715	21.10–28.15
European, Northern	240	615.96	24.25	27.73	1.09	544–718	21.42–28.27
European, Eastern	141	612.43	24.11	25.04	0.99	547–692	21.54–27.24
European, Southern	205	604.52	23.80	22.78	0.90	556–675	21.89–26.57
European, Western	1492	613.50	24.15	25.87	1.02	528–700	20.79–27.56
White American	304	617.37	24.31	25.95	1.02	544–702	21.42–27.64

MEASUREMENT SHOULDER BREADTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2985	494.72	19.48	29.43	1.16	406-685	15.98-26.97
Experienced Officers	2032	498.90	19.64	29.62	1.17	408-685	16.06-26.97
Recruits	953	485.79	19.13	26.91	1.06	406-584	15.98-22.99
<u>Agency</u>							
Police	2055	494.12	19.45	28.30	1.11	406-639	15.98-25.16
Sheriff	519	498.68	19.63	33.27	1.31	415-685	16.34-26.97
Highway Patrol/State Police	175	491.78	19.36	27.51	1.08	417-563	16.42-22.17
Prison/Penitentiary	236	493.34	19.42	30.59	1.20	428-644	16.85-25.35
<u>Region</u>							
San Diego	385	501.54	19.75	25.74	1.01	425-586	16.73-23.07
Los Angeles	142	482.35	18.99	21.71	0.85	426-540	16.77-21.26
Phoenix/Tucson	113	502.21	19.77	22.38	0.88	446-568	17.56-22.36
Dallas/Fort Worth	156	498.62	19.63	26.86	1.06	435-589	17.13-23.19
Houston/Galveston	328	495.32	19.50	35.97	1.42	415-604	16.34-23.78
New Orleans/Baton Rouge	106	478.52	18.84	28.64	1.13	412-556	16.22-21.89
Miami/Fort Lauderdale	174	497.56	19.59	27.18	1.07	431-584	16.97-22.99
Atlanta	146	491.99	19.37	31.33	1.23	421-644	16.57-25.35
Washington D.C.	240	491.78	19.36	25.19	0.99	418-576	16.46-22.68
New York	304	483.49	19.03	26.90	1.06	408-576	16.06-22.68
Detroit	80	491.85	19.36	30.45	1.20	406-555	15.98-21.85
Minneapolis/St. Paul	209	502.64	19.79	27.85	1.10	435-639	17.13-25.16
Kansas City	151	497.97	19.60	33.19	1.31	422-599	16.61-23.58
Denver	177	496.85	19.56	29.06	1.14	425-590	16.73-23.23
Helena/Butte	106	495.53	19.51	29.33	1.15	428-578	16.85-22.76
Spokane	51	500.18	19.69	36.80	1.45	441-685	17.36-26.97
Portland	117	499.50	19.67	27.14	1.07	432-568	17.01-22.36
<u>Ethnic Background</u>							
Black	280	495.31	19.50	30.18	1.19	406-596	15.98-23.46
Mexican American	98	499.55	19.67	30.31	1.19	431-639	16.97-25.16
Puerto Rican/Cuban	27	486.85	19.17	24.70	0.97	415-534	16.34-21.02
American Indian	42	498.69	19.63	42.99	1.69	415-604	16.34-23.78
European, Northern	240	497.49	19.59	28.32	1.11	428-685	16.85-26.97
European, Eastern	141	492.64	19.40	27.17	1.07	415-563	16.34-22.17
European, Southern	205	490.08	19.29	26.55	1.05	420-569	16.54-22.40
European, Western	1490	493.30	19.42	29.13	1.15	408-644	16.06-25.35
White American	304	499.79	19.68	28.92	1.14	416-586	16.38-23.07

MEASUREMENT HEAD LENGTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2992	198.03	7.80	6.97	0.27	165–225	6.50–8.86
Experienced Officers	2036	198.45	7.81	6.87	0.27	176–225	6.93–8.86
Recruits	956	197.14	7.76	7.10	0.28	165–222	6.50–8.76
<u>Agency</u>							
Police	2059	197.98	7.79	6.89	0.27	165–224	6.50–8.82
Sheriff	521	198.36	7.81	6.71	0.26	179–218	7.05–8.58
Highway Patrol/State Police	176	198.83	7.83	7.33	0.29	180–220	7.09–8.66
Prison/Penitentiary	236	197.18	7.76	7.80	0.31	177–225	6.97–8.86
<u>Region</u>							
San Diego	385	198.84	7.83	6.63	0.26	178–220	7.01–8.66
Los Angeles	142	197.29	7.77	7.10	0.28	176–219	6.93–8.62
Phoenix/Tucson	114	198.01	7.80	6.62	0.26	181–216	7.13–8.50
Dallas/Fort Worth	157	198.78	7.83	6.56	0.26	183–213	7.20–8.39
Houston/Galveston	329	198.50	7.82	6.97	0.27	179–220	7.05–8.66
New Orleans/Baton Rouge	106	198.18	7.80	7.64	0.30	180–222	7.09–8.74
Miami/Fort Lauderdale	174	196.74	7.75	6.90	0.27	177–216	6.97–8.50
Atlanta	146	198.99	7.83	7.32	0.29	176–225	6.93–8.86
Washington D.C.	242	197.67	7.78	6.88	0.27	180–220	7.09–8.66
New York	304	196.52	7.74	7.05	0.28	165–212	6.50–8.35
Detroit	80	197.91	7.79	6.25	0.25	181–212	7.13–8.35
Minneapolis/St. Paul	210	198.57	7.82	6.84	0.27	181–221	7.13–8.70
Kansas City	151	197.51	7.78	6.65	0.26	178–214	7.01–8.43
Denver	178	196.86	7.75	6.32	0.25	180–213	7.09–8.39
Helena/Butte	106	198.26	7.81	7.80	0.31	181–218	7.13–8.58
Spokane	51	200.59	7.90	7.00	0.28	178–217	7.01–8.54
Portland	117	199.52	7.86	7.44	0.29	179–220	7.05–8.66
<u>Ethnic Background</u>							
Black	281	199.19	7.84	7.33	0.29	176–220	6.93–8.66
Mexican American	98	193.24	7.61	6.74	0.27	178–210	7.01–8.27
Puerto Rican/Cuban	27	196.74	7.75	8.14	0.32	178–216	7.01–8.50
American Indian	42	197.79	7.79	7.55	0.30	179–210	7.05–8.27
European, Northern	240	198.07	7.80	6.26	0.25	178–220	7.01–8.66
European, Eastern	141	196.82	7.75	6.26	0.25	182–216	7.17–8.50
European, Southern	205	196.93	7.75	6.76	0.27	165–216	6.50–8.50
European, Western	1493	198.20	7.80	6.96	0.27	175–225	6.89–8.86
White American	305	199.18	7.84	6.71	0.26	182–220	7.17–8.66

MEASUREMENT HEAD BREADTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2993	154.68	6.09	5.68	0.22	134-176	5.28-6.93
Experienced Officers	2037	155.36	6.12	5.66	0.22	139-176	5.47-6.93
Reeruits	956	153.23	6.03	5.44	0.21	134-173	5.28-6.81
<u>Agency</u>							
Police	2060	154.55	6.08	5.66	0.22	134-176	5.28-6.93
Sheriff	521	154.58	6.09	5.63	0.22	140-175	5.51-6.89
Highway Patrol/State Police	176	154.86	6.10	5.70	0.22	142-172	5.59-6.77
Prison/Penitentiary	236	155.86	6.14	5.75	0.23	141-171	5.55-6.73
<u>Region</u>							
San Diego	385	155.66	6.13	5.26	0.21	142-170	5.59-6.69
Los Angeles	142	152.71	6.01	5.39	0.21	134-170	5.28-6.69
Phoenix/Tueson	114	155.53	6.12	4.71	0.19	143-167	5.63-6.57
Dallas/Fort Worth	157	155.08	6.11	4.93	0.19	140-169	5.51-6.65
Houston/Galveston	329	155.12	6.11	5.65	0.22	140-174	5.51-6.85
New Orleans/Baton Rouge	106	154.22	6.07	4.96	0.20	142-167	5.59-6.57
Miami/Fort Lauderdale	174	154.32	6.08	5.37	0.21	142-167	5.59-6.57
Atlanta	147	153.76	6.05	5.45	0.21	141-167	5.55-6.57
Washington D.C.	242	152.86	6.02	5.51	0.22	140-167	5.51-6.57
New York	304	153.19	6.03	5.84	0.23	139-173	5.47-6.81
Detroit	80	153.98	6.06	5.57	0.22	140-168	5.51-6.61
Minneapolis/St. Paul	210	156.80	6.17	5.63	0.22	141-176	5.55-6.93
Kansas City	151	154.91	6.10	5.61	0.22	140-174	5.51-6.85
Denver	178	153.30	6.04	5.92	0.23	139-168	5.47-6.61
Helena/Butte	106	157.22	6.19	6.16	0.24	142-175	5.59-6.89
Spokane	51	158.39	6.24	6.56	0.26	142-176	5.59-6.89
Portland	117	155.46	6.12	5.21	0.21	145-172	5.71-6.77
<u>Ethnic Background</u>							
Black	281	153.44	6.04	5.27	0.21	140-167	5.51-6.57
Mexican American	98	155.71	6.13	5.48	0.22	141-174	5.55-6.85
Puerto Rican/Cuban	27	154.85	6.10	4.45	0.18	148-162	5.83-6.38
American Indian	42	156.38	6.16	5.57	0.22	142-165	5.59-6.50
European, Northern	241	154.71	6.09	5.84	0.23	140-176	5.51-6.93
European, Eastern	141	154.94	6.10	6.13	0.24	141-174	5.55-6.85
European, Southern	205	153.57	6.05	5.80	0.23	139-173	5.47-6.81
European, Western	1493	154.83	6.10	5.73	0.23	134-175	5.28-6.89
White American	305	155.25	6.11	5.23	0.21	142-170	5.59-6.69

MEASUREMENT FACE BREADTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2993	143.02	5.63	6.04	0.24	120–167	4.72–6.57
Experienced Officers	2037	143.99	5.67	5.93	0.23	120–167	4.72–6.57
Recruits	956	140.96	5.55	5.76	0.23	124–158	4.88–6.22
<u>Agency</u>							
Police	2060	142.67	5.62	5.99	0.24	124–162	4.88–6.38
Sheriff	521	143.66	5.66	6.08	0.24	125–167	4.92–6.57
Highway Patrol/State Police	176	143.15	5.64	5.99	0.24	127–156	5.00–6.14
Prison/Penitentiary	236	144.58	5.69	6.09	0.24	120–163	4.72–6.42
<u>Region</u>							
San Diego	385	143.70	5.66	5.46	0.21	129–160	5.08–6.30
Los Angeles	142	139.90	5.51	5.65	0.22	124–155	4.88–6.10
Phoenix/Tucson	114	144.28	5.68	5.64	0.22	131–159	5.16–6.26
Dallas/Fort Worth	157	144.72	5.70	5.51	0.22	131–158	5.16–6.22
Houston/Galveston	329	143.33	5.64	6.53	0.26	127–162	5.00–6.38
New Orleans/Baton Rouge	106	143.19	5.64	5.13	0.20	129–154	5.08–6.60
Miami/Fort Lauderdale	157	144.72	5.70	5.51	0.22	131–158	5.16–6.22
Atlanta	147	143.10	5.63	5.89	0.23	120–160	4.72–6.30
Washington D.C.	242	140.71	5.54	5.74	0.23	125–156	4.92–6.14
New York	304	141.64	5.58	6.00	0.24	126–161	4.96–6.34
Detroit	80	142.44	5.61	5.05	0.20	132–156	5.20–6.14
Minneapolis/St. Paul	210	144.47	5.69	6.21	0.24	126–161	4.96–6.34
Kansas City	151	143.59	5.65	6.11	0.24	130–160	5.12–6.30
Denver	178	142.73	5.62	5.48	0.22	127–157	5.00–6.18
Helena/Butte	106	145.78	5.74	6.36	0.25	131–167	5.16–6.57
Spokane	51	145.47	5.73	7.00	0.28	128–161	5.04–6.34
Portland	117	143.60	5.65	5.79	0.23	129–158	5.08–6.22
<u>Ethnic Background</u>							
Black	281	142.14	5.60	5.62	0.22	130–160	5.12–6.30
Mexican American	98	145.73	5.74	5.85	0.23	128–162	5.04–6.38
Puerto Rican/Cuban	27	141.59	5.57	7.15	0.28	124–161	4.88–6.34
American Indian	42	145.50	5.73	7.07	0.28	134–162	5.28–6.38
European, Northern	241	142.97	5.63	5.94	0.23	128–160	5.04–6.30
European, Eastern	141	142.55	5.61	6.18	0.24	125–161	4.92–6.34
European, Southern	205	142.30	5.60	6.03	0.24	126–161	4.92–6.34
European, Western	1493	143.03	5.63	6.14	0.24	120–167	4.72–6.57
White American	305	143.30	5.64	5.50	0.22	129–160	5.08–6.30

MEASUREMENT FACE LENGTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2989	121.29	4.78	6.42	0.25	103-155	4.06-6.10
Experienced Officers	2033	121.71	4.79	6.47	0.25	103-155	4.06-6.10
Recruits	956	120.40	4.74	6.21	0.24	103-142	4.06-5.59
<u>Agency</u>							
Police	2058	121.44	4.78	6.40	0.25	103-155	4.06-6.10
Sheriff	520	121.00	4.76	6.45	0.25	103-148	4.06-5.83
Highway Patrol/State Police	176	120.46	4.74	6.81	0.27	105-149	4.13-5.87
Prison/Penitentiary	235	121.30	4.78	6.16	0.24	105-136	4.13-5.35
<u>Region</u>							
San Diego	385	122.82	4.84	5.85	0.23	106-141	4.17-5.55
Los Angeles	142	120.40	4.74	6.56	0.26	105-138	4.13-5.43
Phoenix/Tucson	114	120.17	4.73	6.82	0.27	105-136	4.13-5.35
Dallas/Fort Worth	174	119.63	4.71	6.51	0.26	105-141	4.13-5.55
Houston/Galveston	329	121.40	4.78	6.47	0.25	103-148	4.06-5.83
New Orleans/Baton Rouge	106	119.37	4.70	6.09	0.24	107-144	4.21-5.67
Miami/Fort Lauderdale	156	121.38	4.78	6.21	0.24	105-141	4.13-5.55
Atlanta	146	121.71	4.79	6.29	0.25	106-136	4.17-5.35
Washington D.C.	241	119.59	4.71	6.56	0.26	103-142	4.06-5.59
New York	304	121.42	4.78	6.28	0.25	105-140	4.13-5.51
Detroit	79	122.03	4.80	5.81	0.23	110-136	4.33-5.35
Minneapolis/St. Paul	210	122.26	4.81	6.80	0.27	106-143	4.17-5.63
Kansas City	151	120.81	4.76	6.59	0.26	107-155	4.21-6.10
Denver	178	120.99	4.76	5.56	0.22	109-135	4.29-5.31
Helena/Butte	106	122.06	4.81	6.29	0.25	109-137	4.29-5.39
Spokane	51	122.16	4.81	7.18	0.28	107-143	4.21-5.63
Portland	117	122.62	4.83	6.36	0.25	110-149	4.33-5.87
<u>Ethnic Background</u>							
Black	280	122.75	4.83	6.25	0.25	103-141	4.06-5.55
Mexican American	98	122.22	4.81	5.66	0.22	105-138	4.13-5.43
Puerto Rican/Cuban	27	120.78	4.76	5.75	0.23	110-132	4.33-5.20
American Indian	42	120.10	4.73	5.23	0.21	106-130	4.17-5.12
European, Northern	240	120.55	4.75	6.50	0.26	105-142	4.13-5.59
European, Eastern	141	120.84	4.76	5.76	0.23	106-134	4.17-5.28
European, Southern	204	122.06	4.81	6.13	0.24	103-144	4.06-5.67
European, Western	1492	120.81	4.76	6.56	0.26	104-155	4.09-6.10
White American	305	122.04	4.80	5.97	0.23	105-138	4.13-5.43

MEASUREMENT LIP LENGTH

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2992	51.51	2.03	4.38	0.17	37-68	1.46-2.68
Experienced Officers	2036	52.26	2.06	4.30	0.17	37-68	1.46-2.68
Recruits	956	50.28	1.98	4.25	0.17	38-68	1.50-2.68
<u>Agency</u>							
Police	2060	51.39	2.02	4.33	0.17	37-67	1.46-2.64
Sheriff	521	51.36	2.02	4.26	0.17	41-67	1.61-2.64
Highway Patrol/State Police	176	51.38	2.02	4.50	0.18	41-68	1.61-2.68
Prison/Penitentiary	235	52.95	2.08	4.76	0.19	40-66	1.57-2.60
<u>Region</u>							
San Diego	385	52.51	2.07	4.10	0.16	44-65	1.73-2.56
Los Angeles	142	50.16	1.97	3.77	0.15	40-59	1.57-2.32
Phoenix/Tucson	114	51.65	2.03	4.16	0.16	41-66	1.61-2.64
Dallas/Fort Worth	157	52.38	2.06	4.20	0.17	43-63	1.69-2.48
Houston/Galveston	329	50.39	1.98	4.57	0.18	39-65	1.54-2.56
New Orleans/Baton Rouge	106	49.73	1.96	3.94	0.16	42-68	1.65-2.68
Miami/Fort Lauderdale	174	51.42	2.02	4.03	0.16	42-67	1.65-2.64
Atlanta	146	52.21	2.06	3.97	0.16	44-63	1.73-2.48
Washington D.C.	242	51.76	2.04	4.39	0.17	41-65	1.61-2.56
New York	304	50.36	1.98	4.39	0.17	37-65	1.46-2.56
Detroit	80	53.35	2.10	4.46	0.18	43-67	1.69-2.64
Minneapolis/St. Paul	210	51.14	2.01	4.29	0.17	41-61	1.61-2.40
Kansas City	151	50.15	1.97	4.11	0.16	41-60	1.61-2.36
Denver	178	52.85	2.08	4.41	0.17	38-62	1.50-2.44
Helena/Butte	106	54.22	2.13	4.13	0.16	42-64	1.65-2.52
Spokane	51	52.59	2.11	3.38	0.13	47-64	1.85-2.52
Portland	117	50.70	2.00	4.34	0.17	42-63	1.65-2.58
<u>Ethnic Background</u>							
Black	281	54.19	2.13	4.13	0.16	43-67	1.69-2.64
Mexican American	98	51.98	2.05	4.00	0.16	44-61	1.73-2.40
Puerto Rican/Cuban	27	50.30	1.98	4.31	0.17	43-58	1.69-2.28
American Indian	42	51.52	2.03	2.74	0.11	45-56	1.77-2.20
European, Northern	241	51.10	2.01	4.21	0.17	42-67	1.65-2.64
European, Eastern	141	51.06	2.01	4.36	0.17	39-60	1.54-2.36
European, Southern	205	50.40	1.98	4.03	0.16	37-65	1.46-2.56
European, Western	1492	51.14	2.01	4.42	0.17	38-68	1.50-2.68
White American	305	51.87	2.04	4.10	0.16	39-64	1.54-2.52

MEASUREMENT HAND LENGTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2989	193.46	7.62	9.12	0.36	151-232	5.94-9.13
Experienced Officers	2033	193.67	7.62	9.10	0.36	151-232	5.94-9.13
Recruits	956	193.02	7.60	9.17	0.36	164-228	6.46-8.98
<u>Agency</u>							
Police	2058	193.92	7.63	8.84	0.35	167-232	6.57-9.13
Sheriff	519	192.37	7.57	9.37	0.37	166-219	6.54-8.62
Highway Patrol/State Police	176	192.86	7.59	9.65	0.38	164-228	6.46-8.98
Prison/Penitentiary	236	192.30	7.57	10.21	0.40	151-232	5.94-9.13
<u>Region</u>							
San Diego	385	196.86	7.75	7.98	0.31	179-224	7.05-8.82
Los Angeles	142	192.90	7.59	7.60	0.30	175-216	6.89-8.50
Phoenix/Tucson	114	193.31	7.61	9.37	0.37	172-216	6.77-8.50
Dallas/Fort Worth	157	194.93	7.67	8.70	0.34	177-224	6.97-8.82
Houston/Galveston	327	190.92	7.52	9.54	0.38	167-232	6.57-9.13
New Orleans/Baton Rouge	106	184.98	7.28	7.73	0.30	164-206	6.46-8.11
Miami/Fort Lauderdale	174	195.22	7.69	8.35	0.33	177-219	6.97-8.62
Atlanta	147	194.33	7.65	8.82	0.35	165-215	6.50-8.46
Washington D.C.	241	195.36	7.69	9.64	0.38	170-228	6.69-8.98
New York	304	193.39	7.61	8.33	0.33	173-223	6.81-8.78
Detroit	80	196.73	7.75	8.27	0.33	175-215	6.89-8.46
Minneapolis/St. Paul	209	193.08	7.60	8.47	0.33	168-215	6.61-8.46
Kansas City	151	193.44	7.62	9.29	0.27	169-219	6.65-8.62
Denver	178	193.99	7.64	8.07	0.32	172-216	6.77-8.50
Helena/Butte	106	186.66	7.35	9.49	0.37	151-207	5.94-8.15
Spokane	51	190.31	7.49	8.68	0.34	173-208	6.81-8.19
Portland	117	193.71	7.63	9.31	0.37	173-223	6.81-8.78
<u>Ethnic Background</u>							
Black	280	201.44	7.93	9.01	0.35	174-232	6.85-9.13
Mexican American	98	190.72	7.51	7.07	0.28	176-210	6.93-8.27
Puerto Rican/Cuban	27	192.78	7.59	7.08	0.28	178-206	7.01-8.11
American Indian	42	191.76	7.55	8.50	0.33	169-203	6.65-7.99
European, Northern	241	191.62	7.54	9.24	0.36	165-217	6.50-8.54
European, Eastern	141	192.43	7.58	8.11	0.32	168-211	6.61-8.31
European, Southern	205	191.99	7.56	7.89	0.31	173-218	6.81-8.58
European, Western	1490	192.19	7.57	8.72	0.34	151-232	5.94-9.13
White American	305	195.57	7.70	8.80	0.35	170-224	6.69-8.82

MEASUREMENT FOREFINGER LENGTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2987	126.23	4.97	7.62	0.30	105–154	4.13–6.06
Experienced Officers	2033	126.67	4.99	7.66	0.30	106–151	4.17–5.94
Recruits	954	125.28	4.93	7.46	0.29	105–154	4.13–6.06
<u>Agency</u>							
Police	2055	126.51	4.98	7.50	0.30	105–154	4.13–6.06
Sheriff	520	125.74	4.95	7.65	0.30	106–150	4.17–5.91
Highway Patrol/State Police	176	125.75	4.95	7.94	0.31	107–151	4.21–5.94
Prison/Penitentiary	236	125.11	4.93	8.19	0.32	106–151	4.17–5.94
<u>Region</u>							
San Diego	385	129.93	5.12	7.04	0.28	108–151	4.25–5.94
Los Angeles	140	125.66	4.95	6.85	0.27	108–152	4.25–5.98
Phoenix/Tucson	114	126.90	5.00	7.42	0.29	108–145	4.25–5.71
Dallas/Fort Worth	157	128.73	5.07	7.59	0.30	113–148	4.45–5.83
Houston/Galveston	328	123.86	4.88	7.53	0.30	106–148	4.17–5.83
New Orleans/Baton Rouge	106	122.37	4.82	7.49	0.29	108–139	4.25–5.47
Miami/Fort Lauderdale	174	127.32	5.01	7.45	0.29	110–150	4.33–5.91
Atlanta	146	126.99	5.00	7.99	0.31	109–151	4.29–5.94
Washington D.C.	242	125.08	4.92	7.78	0.31	108–152	4.25–5.98
New York	303	125.51	4.94	6.91	0.27	105–144	4.13–5.67
Detroit	80	128.13	5.04	6.39	0.25	113–144	4.45–5.67
Minneapolis/St. Paul	209	125.39	4.94	7.35	0.29	107–148	4.21–5.83
Kansas City	151	126.32	4.97	7.64	0.30	109–147	4.29–5.79
Denver	178	125.23	4.93	6.87	0.27	110–154	4.33–6.06
Helena/Butte	106	122.88	4.84	7.47	0.29	106–142	4.17–5.59
Spokane	51	125.27	4.93	8.03	0.32	110–142	4.33–5.59
Portland	117	127.51	5.02	7.36	0.29	113–147	4.45–5.79
<u>Ethnic Background</u>							
Black	281	128.23	5.05	7.71	0.30	107–152	4.21–5.98
Mexican American	98	121.56	4.79	5.79	0.23	106–137	4.17–5.39
Puerto Rican/Cuban	27	127.48	5.02	8.22	0.32	105–143	4.13–5.63
American Indian	42	126.43	4.98	7.43	0.29	109–140	4.29–5.51
European, Northern	241	125.56	4.94	7.55	0.30	107–150	4.21–5.91
European, Eastern	141	125.21	4.93	7.75	0.31	106–149	4.17–5.87
European, Southern	205	126.15	4.97	7.12	0.28	110–148	4.33–5.83
European, Western	1488	125.56	4.94	7.41	0.29	106–154	4.17–6.06
White American	305	129.36	5.09	7.76	0.31	108–151	4.25–5.94

MEASUREMENT HAND BREADTH

	Number	Mean		SD		Range	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2986	89.88	3.54	4.24	0.17	75-105	2.95-4.13
Experienced Officers	2033	90.22	3.55	4.19	0.17	78-105	3.07-4.13
Recruits	953	89.16	3.51	4.24	0.17	75-105	2.95-4.13
<u>Agency</u>							
Police	2054	89.81	3.54	4.19	0.17	76-105	2.99-4.13
Sheriff	521	89.82	3.54	4.45	0.18	75-105	2.95-4.13
Highway Patrol/State Police	176	90.45	3.56	4.05	0.16	80-102	3.15-4.02
Prison/Penitentiary	235	90.25	3.55	4.22	0.17	79-101	3.11-3.98
<u>Region</u>							
San Diego	385	90.69	3.57	3.83	0.15	79-101	3.11-3.98
Los Angeles	140	88.84	3.50	4.14	0.16	78-99	3.07-3.90
Phoenix/Tucson	114	90.61	3.57	4.22	0.17	77-101	3.03-3.98
Dallas/Fort Worth	156	91.13	3.59	4.85	0.19	79-105	3.11-4.13
Houston/Galveston	327	89.53	3.52	4.46	0.18	78-103	3.07-4.06
New Orleans/Baton Rouge	106	89.00	3.50	4.18	0.16	78-97	3.07-3.82
Miami/Fort Lauderdale	173	90.64	3.57	4.01	0.16	78-105	3.07-4.13
Atlanta	147	89.54	3.53	4.34	0.17	79-101	3.11-3.98
Washington D.C.	242	89.90	3.54	4.16	0.16	75-102	2.95-4.02
New York	304	88.87	3.50	4.23	0.17	76-103	2.99-4.06
Detroit	80	89.48	3.52	4.88	0.19	78-105	3.07-4.13
Minneapolis/St. Paul	210	90.18	3.55	3.96	0.16	80-103	3.15-4.06
Kansas City	151	89.69	3.53	4.23	0.17	81-104	3.19-4.09
Denver	178	89.50	3.52	3.90	0.15	80-99	3.15-3.90
Helena/Butte	106	90.48	3.56	3.83	0.15	82-99	3.23-3.90
Spokane	51	90.69	3.57	4.60	0.18	78-100	3.07-3.94
Portland	117	89.48	3.52	3.82	0.15	80-100	3.15-3.94
<u>Ethnic Background</u>							
Black	281	90.91	3.58	4.43	0.17	80-105	3.15-4.13
Mexican American	96	88.11	3.47	4.05	0.16	79-99	3.11-3.90
Puerto Rican/Cuban	27	88.56	3.49	3.88	0.15	77-97	3.03-3.82
American Indian	42	89.60	3.53	5.60	0.22	80-105	3.15-4.13
European, Northern	241	89.98	3.54	3.97	0.16	78-100	3.07-3.94
European, Eastern	141	89.52	3.52	4.34	0.17	80-103	3.15-4.06
European, Southern	205	89.50	3.52	4.27	0.17	78-105	3.07-4.13
European, Western	1489	89.71	3.53	4.17	0.16	75-104	2.95-4.09
White American	305	90.60	3.57	4.03	0.16	78-101	3.07-3.98

MEASUREMENT TRIGGER POSITION

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>	
		mm	in	mm	in	mm	in
<u>Total Sample</u>	2867	67.65	2.66	6.73	0.26	52–91	2.05–3.58
Experienced Officers	1946	67.46	2.66	6.89	0.27	52–91	2.05–3.58
Recruits	921	68.04	2.68	6.35	0.25	52–89	2.05–3.50
<u>Agency</u>							
Police	1938	67.79	2.67	6.78	0.27	52–89	2.05–3.50
Sheriff	519	67.73	2.67	6.66	0.26	52–91	2.05–3.58
Highway Patrol/State Police	179	66.57	2.62	5.78	0.23	52–86	2.05–3.39
Prison/Penitentiary	234	67.12	2.64	6.91	0.27	52–91	2.05–3.58
<u>Region</u>							
San Diego	287	66.84	2.63	6.87	0.27	52–88	2.05–3.46
Los Angeles	142	68.96	2.71	5.69	0.22	57–88	2.24–3.46
Phoenix/Tucson	114	69.18	2.72	6.44	0.25	54–86	2.13–3.39
Dallas/Fort Worth	157	68.79	2.71	6.53	0.26	54–89	2.13–3.50
Houston/Galveston	311	65.15	2.56	6.13	0.24	52–88	2.05–3.46
New Orleans/Baton Rouge	105	65.85	2.59	5.55	0.22	52–82	2.05–3.23
Miami/Fort Lauderdale	170	66.32	2.61	5.88	0.23	53–84	2.09–3.31
Atlanta	146	70.78	2.79	6.26	0.25	60–89	2.36–3.50
Washington D.C.	242	67.81	2.67	6.68	0.26	52–89	2.05–3.50
New York	303	68.37	2.69	7.26	0.29	52–89	2.05–3.50
Detroit	80	74.11	2.92	6.11	0.24	60–91	2.36–3.58
Minneapolis/St. Paul	210	66.06	2.60	6.00	0.24	52–86	2.05–3.39
Kansas City	150	69.12	2.72	6.71	0.26	55–90	2.17–3.54
Denver	177	69.48	2.74	6.78	0.27	53–91	2.09–3.58
Helena/Butte	106	64.80	2.55	6.39	0.25	54–80	2.13–3.15
Spokane	51	65.84	2.59	6.55	0.26	54–79	2.13–3.11
Portland	117	66.17	2.61	5.63	0.22	54–88	2.13–3.46
<u>Ethnic Background</u>							
Black	270	69.67	2.74	7.51	0.30	52–89	2.05–3.50
Mexican American	96	66.36	2.61	6.76	0.27	59–91	2.09–3.58
Puerto Rican/Cuban	27	67.93	2.67	5.81	0.23	55–80	2.17–3.15
American Indian	42	68.00	2.68	7.96	0.31	52–86	2.05–3.39
European, Northern	240	67.33	2.65	6.72	0.26	52–91	2.05–3.58
European, Eastern	139	67.74	2.67	6.92	0.27	54–84	2.13–3.39
European, Southern	203	67.29	2.65	6.55	0.26	53–89	2.09–3.50
European, Western	1463	67.41	2.65	6.53	0.26	52–90	2.05–3.54
White American	265	67.29	2.65	6.52	0.26	54–88	2.13–3.46

MEASUREMENT AGE

	Number	<u>Mean</u> Years	<u>SD</u> Years	<u>Range</u> Years
<u>Total Sample</u>	2969	30.71	8.67	18-65
Experienced Officers	2022	33.35	9.06	18-65
Recruits	947	25.09	3.71	18-44
<u>Agency</u>				
Police	2045	29.87	7.94	18-65
Sheriff	513	30.54	8.25	20-65
Highway Patrol/State Police	175	29.23	7.07	20-55
Prison/Penitentiary	236	39.46	11.40	18-65
<u>Region</u>				
San Diego	384	31.39	6.10	22-56
Los Angeles	142	25.60	3.18	21-36
Phoenix/Tucson	114	30.10	7.16	20-54
Dallas/Fort Worth	157	32.84	8.58	20-55
Houston/Galveston	329	31.05	10.58	18-65
New Orleans/Baton Rouge	106	26.42	5.26	20-65
Miami/Fort Lauderdale	174	28.87	6.95	20-49
Atlanta	147	33.75	11.56	21-63
Washington D.C.	242	25.84	5.35	18-49
New York	302	27.18	6.26	21-62
Detroit	80	30.56	7.67	19-48
Minneapolis/St. Paul	210	37.51	9.78	21-64
Kansas City	150	32.67	9.63	19-62
Denver	177	29.86	6.19	21-51
Helena/Butte	106	35.86	11.50	21-65
Spokane	51	34.69	9.03	21-55
Portland	117	33.72	8.38	21-56
<u>Ethnic Background</u>				
Black	281	29.57	7.32	19-60
Mexican American	98	29.55	7.48	20-65
Puerto Rican/Cuban	26	27.62	3.67	20-38
American Indian	42	30.02	7.39	19-58
European, Northern	240	31.90	8.90	20-63
European, Eastern	140	29.14	8.09	20-61
European, Southern	205	27.99	6.80	21-57
European, Western	1479	31.16	9.33	18-65
White American	303	31.45	7.15	20-64

MEASUREMENT LENGTH OF SERVICE

	Number	<u>Mean</u> Years	<u>SD</u> Years	<u>Range</u> Years
<u>Total Sample</u>	2969	4.82	5.86	1–35
Experienced Officers	2019	6.60	6.35	1–35
Recruits	950	1.04	0.67	1–18
<u>Agency</u>				
Police	2046	4.90	5.99	1–35
Sheriff	515	3.70	4.38	1–28
Highway Patrol/State Police	176	4.34	6.07	1–31
Prison/Penitentiary	232	6.99	6.70	1–29
<u>Region</u>				
San Diego	381	5.91	5.67	1–30
Los Angeles	142	1.06	0.46	1–7
Phoenix/Tucson	114	3.76	4.20	1–20
Dallas/Fort Worth	157	6.68	5.64	1–26
Houston/Galveston	329	3.95	5.60	1–35
New Orleans/Baton Rouge	106	1.92	1.93	1–13
Miami/Fort Lauderdale	174	3.16	4.50	1–27
Atlanta	144	5.82	7.15	1–29
Washington D.C.	242	2.25	2.56	1–23
New York	304	3.11	4.97	1–29
Detroit	80	5.44	6.82	1–26
Minneapolis/St. Paul	210	10.51	7.80	1–34
Kansas City	150	5.68	5.84	1–27
Denver	172	3.56	3.79	1–25
Helena/Butte	106	5.76	5.44	1–25
Spokane	51	8.37	7.64	1–28
Portland	117	8.18	7.32	1–31
<u>Ethnic Background</u>				
Black	279	3.20	4.82	1–35
Mexican American	98	3.14	4.79	1–27
Puerto Rican/Cuban	27	1.59	1.52	1–8
American Indian	42	4.24	4.69	1–20
European, Northern	240	5.95	5.96	1–32
European, Eastern	141	4.21	5.73	1–28
European, Southern	203	3.20	4.55	1–25
European, Western	1479	5.16	6.22	1–34
White American	303	5.46	5.17	1–30

AGENCY

Percentage of Sample from Different Agencies

	<u>Number</u>	<u>Police</u>	<u>Sheriff</u>	<u>Highway Patrol</u>	<u>Prison</u>	<u>State Police</u>	<u>No Answer</u>
<u>Total Sample</u>	2993	68.83	17.41	4.48	7.89	1.40	—
Experienced Officers	2037	63.97	20.32	2.45	11.58	2.06	—
Recruits	956	79.18	11.19	9.62	—	—	—
<u>Agency</u>							
Police	2060	100	—	—	—	—	—
Sheriff	521	—	100	—	—	—	—
Highway Patrol/State Police	176	—	—	76.14	—	23.86	—
Prison/Penitentiary	236	—	—	—	100	—	—
<u>Region</u>							
San Diego	385	92.21	7.79	—	—	—	—
Los Angeles	142	70.85	—	9.15	—	—	—
Phoenix/Tucson	114	28.95	59.65	—	11.40	—	—
Dallas/Fort Worth	157	79.62	13.38	—	7.01	—	—
Houston/Galveston	329	51.06	33.74	—	15.20	—	—
New Orleans/Baton Rouge	106	27.36	29.25	43.40	—	—	—
Miami/Fort Lauderdale	174	82.18	10.34	—	7.47	—	—
Atlanta	147	66.67	6.80	—	26.53	—	—
Washington D.C.	242	65.70	18.18	16.12	—	—	—
New York	304	100.00	—	—	—	—	—
Detroit	80	55.00	45.00	—	—	—	—
Minneapolis/St. Paul	210	90.48	9.52	—	—	—	—
Kansas City	151	66.23	9.27	—	24.50	—	—
Denver	178	52.25	18.54	15.73	13.48	—	—
Helena/Butte	106	35.85	10.38	7.35	46.23	—	—
Spokane	51	25.49	74.51	—	—	—	—
Portland	117	32.33	30.77	—	—	35.90	—
<u>Ethnic Background</u>							
Black	281	77.58	13.17	3.20	5.69	0.36	—
Mexican American	98	66.33	15.31	1.02	17.35	—	—
Puerto Rican/Cuban	27	85.19	7.41	—	7.41	—	—
American Indian	42	50.00	30.95	4.76	11.90	2.38	—
European, Northern	241	62.66	21.58	3.32	9.13	3.32	—
European, Eastern	141	80.14	14.18	3.55	2.13	—	—
European, Southern	205	83.90	12.68	1.46	1.46	0.49	—
European, Western	1493	61.29	20.63	6.56	9.71	1.81	—
White American	305	83.61	10.49	1.31	4.59	—	—

DUTY

Percentage of Sample with Different Duties

	Number	Patrol	Traffic	Investi- gations	Communi- cations	Adminis- tration	Other	No Answer
<u>Total Sample</u>	2993	40.06	4.64	5.28	0.70	5.25	43.27	0.80
Experienced Officers	2037	56.16	4.96	7.71	0.98	7.71	21.31	1.18
Recruits	956	5.75	3.97	0.10	0.10	—	90.06	—
<u>Agency</u>								
Police	2060	45.68	3.64	5.34	0.44	4.47	39.37	1.07
Sheriff	521	36.85	1.73	8.45	1.34	5.37	45.87	0.38
Highway Patrol/State Police	176	35.80	31.25	2.27	1.14	3.41	26.14	—
Prison/Penitentiary	236	1.27	—	—	1.27	13.14	84.32	—
<u>Region</u>								
San Diego	385	65.19	9.09	5.97	0.78	2.08	11.69	5.19
Los Angeles	142	7.75	1.41	—	—	—	90.85	—
Phoenix/Tucson	114	33.33	10.53	9.65	—	1.75	44.74	—
Dallas/Fort Worth	157	68.79	0.64	3.18	—	1.91	23.57	1.91
Houston/Galveston	329	21.58	0.91	3.04	0.30	5.78	68.39	—
New Orleans/Baton Rouge	106	35.85	33.96	3.77	—	0.94	25.47	—
Miami/Fort Lauderdale	174	30.46	3.45	3.45	—	2.30	60.34	—
Atlanta	147	54.42	—	—	0.68	8.16	36.73	—
Washington D.C.	242	26.03	1.24	6.61	—	7.44	58.68	—
New York	304	18.42	—	0.66	0.66	1.97	78.29	—
Detroit	80	50.00	1.25	2.50	2.50	13.75	30.00	—
Minneapolis/St. Paul	210	53.81	7.62	14.76	1.43	12.86	9.52	—
Kansas City	151	48.34	2.65	0.66	1.32	8.61	38.41	—
Denver	178	44.38	3.93	—	1.12	0.56	50.00	—
Helena/Butte	106	34.91	1.89	2.83	1.89	17.92	40.57	—
Spokane	51	54.90	5.88	27.45	1.96	5.88	1.96	1.96
Portland	117	51.28	6.84	25.64	1.71	8.55	5.96	—
<u>Ethnic Background</u>								
Black	281	27.05	1.42	5.69	—	5.69	59.79	0.36
Mexican American	98	25.51	2.04	—	—	8.16	62.24	2.04
Puerto Rican/Cuban	27	14.81	3.70	—	—	—	81.48	—
American Indian	42	45.24	—	—	—	2.38	52.38	—
European, Northern	241	48.13	3.32	8.30	0.41	7.05	32.78	—
European, Eastern	141	37.59	4.26	5.67	—	5.67	46.81	—
European, Southern	205	26.34	1.95	3.41	0.98	4.88	62.44	—
European, Western	1493	36.12	5.36	5.76	0.94	5.22	43.47	0.13
White American	305	63.61	9.51	3.61	0.66	2.30	16.07	4.26

RANK

Percentage of Sample with Different Ranks

	Number	Academy	Patrolman	Sergeant	Lieutenant	Captain	Deputy	Guard	Other	No Answer
<u>Total Sample</u>	2993	31.94	40.29	6.68	1.77	1.11	9.99	5.45	2.67	0.10
Experienced Officers	2037	—	59.20	9.82	2.60	1.62	14.68	8.00	3.93	0.15
Recruits	956	100.00	—	—	—	—	—	—	—	—
<u>Agency</u>										
Police	2060	36.75	52.82	6.02	1.65	1.02	0.15	—	1.55	0.05
Sheriff	521	20.54	12.09	9.98	1.54	1.14	51.82	0.77	1.73	0.38
Highway Patrol/State Police	176	52.27	30.12	5.12	1.70	0.57	—	—	10.23	—
Prison/Penitentiary	236	—	0.84	6.35	3.39	2.12	11.02	67.37	8.90	—
<u>Region</u>										
San Diego	385	8.31	69.61	9.09	2.60	0.94	7.27	—	1.82	0.26
Los Angeles	142	90.85	9.15	—	—	—	—	—	—	—
Phoenix/Tucson	114	32.46	29.82	6.14	0.88	0.88	21.93	0.88	5.26	1.75
Dallas/Fort Worth	157	1.27	78.35	5.10	—	—	7.64	0.37	1.27	—
Houston/Galveston	329	25.53	19.15	5.47	3.65	2.72	28.88	11.85	2.13	—
New Orleans/Baton Rouge	106	70.75	—	4.72	0.94	—	19.81	—	3.77	—
Miami/Fort Lauderdale	174	54.60	28.73	2.87	2.87	—	3.45	7.47	—	—
Atlanta	147	10.20	48.98	5.44	3.40	0.68	6.80	19.73	4.76	—
Washington D.C.	242	57.02	38.02	2.48	—	—	0.83	—	1.65	—
New York	304	77.96	21.05	0.33	—	—	—	—	0.66	—
Detroit	80	21.25	30.00	15.00	1.25	—	30.00	—	2.50	—
Minneapolis/St. Paul	210	—	73.81	12.38	4.76	3.34	5.24	—	0.48	—
Kansas City	151	18.54	52.98	2.65	—	0.66	—	23.84	—	—
Denver	178	32.58	42.70	4.50	—	—	17.42	—	2.81	—
Helena/Butte	106	0.94	31.13	15.09	1.89	2.82	10.38	31.13	6.60	—
Spokane	51	1.96	47.06	29.41	1.96	3.92	5.88	3.92	5.88	—
Portland	117	5.98	29.91	22.22	4.27	2.56	17.09	—	17.95	—
<u>Ethnic Background</u>										
Black	281	46.26	34.17	1.07	1.07	1.43	11.74	2.14	2.14	—
Mexican American	98	34.69	31.63	5.10	1.02	—	16.33	9.18	2.04	—
Puerto Rican/Cuban	27	74.07	18.52	—	—	—	—	7.41	—	—
American Indian	42	23.81	33.33	9.52	7.14	—	14.29	7.14	4.76	—
European, Northern	241	19.92	44.80	11.61	2.07	1.65	10.37	5.81	3.73	—
European, Eastern	141	43.97	38.30	5.68	0.71	2.84	6.38	2.13	—	—
European, Southern	205	60.98	25.37	4.88	0.49	—	6.34	—	1.95	—
European, Western	1493	31.61	36.57	7.24	1.67	1.08	10.92	7.43	3.48	—
White American	305	6.23	71.15	5.90	2.95	0.99	8.52	3.28	0.98	—

ETHNIC BACKGROUND

Percentage of Sample with Different Ethnic Backgrounds

	Number	Black	Mexican American	Puerto Rican/Cuban	American Indian	European, Northern	European, Eastern	European, Southern	European, Western	White American	All Others	No Answer
<u>Total Sample</u>	2993	9.39	3.27	0.90	1.40	8.05	4.71	6.85	49.88	10.19	3.84	1.50
Experienced Officers	2037	7.41	3.14	0.35	1.57	9.47	3.88	3.93	50.12	14.04	4.13	1.96
Recruits	956	13.60	3.56	2.09	1.05	5.02	6.49	13.08	49.37	1.99	3.23	0.52
<u>Agency</u>												
Police	2060	10.58	3.16	1.12	1.02	7.33	5.49	8.35	44.42	12.38	4.39	1.80
Sheriff	521	7.10	2.88	0.38	2.50	9.98	3.84	4.99	59.12	6.14	1.92	1.15
Highway Patrol/State Police	176	5.68	0.57	—	1.70	9.09	2.84	2.27	71.02	2.27	3.41	1.14
Prison/Penitentiary	236	6.78	7.20	0.84	2.12	9.32	1.27	1.27	61.44	5.93	3.81	—
<u>Region</u>												
San Diego	385	4.16	4.16	—	0.52	1.56	0.78	1.04	21.82	57.66	1.56	6.75
Los Angeles	142	6.34	4.93	—	2.82	6.34	7.04	8.45	55.63	—	6.34	2.11
Phoenix/Tucson	114	1.75	5.26	—	1.75	7.02	7.02	6.14	61.40	2.63	5.27	1.75
Dallas/Fort Worth	157	5.73	5.10	—	3.18	4.46	3.18	1.91	48.41	12.10	13.38	2.55
Houston/Galveston	329	9.12	9.12	—	3.95	2.43	3.34	3.95	58.36	7.60	2.12	—
New Orleans/Baton Rouge	106	4.72	—	—	1.89	—	0.94	11.32	65.09	15.09	—	0.94
Miami/Fort Lauderdale	175	5.75	—	6.89	1.15	10.34	8.62	8.62	52.87	—	4.60	1.15
Atlanta	147	21.77	—	—	2.72	4.08	1.36	1.36	52.38	5.44	10.88	—
Washington D.C.	242	27.69	0.41	—	1.24	4.96	5.79	3.72	51.65	2.07	2.48	—
New York	304	13.49	—	4.61	0.33	1.97	7.57	33.22	37.17	—	1.32	0.33
Detroit	80	28.75	1.25	1.25	—	5.00	13.75	6.25	38.75	1.25	1.25	2.50
Minneapolis/St. Paul	210	1.43	0.95	—	—	31.43	10.48	2.86	49.52	0.48	2.86	—
Kansas City	151	10.60	3.31	—	1.32	10.60	2.65	0.66	66.23	—	4.64	—
Denver	178	8.99	11.80	—	—	11.80	2.25	5.62	53.93	—	4.49	1.12
Helena/Butte	106	—	0.94	—	—	22.64	3.77	0.94	68.87	2.83	—	—
Spokane	51	—	—	—	—	19.61	3.92	1.96	68.63	3.92	1.96	—
Portland	117	1.71	—	—	1.71	17.09	1.71	2.56	65.81	—	7.68	—
<u>Ethnic Background</u>												
Black	281	100	—	—	—	—	—	—	—	—	—	—
Mexican American	98	—	100	—	—	—	—	—	—	—	—	—
Puerto Rican/Cuban	27	—	—	100	—	—	—	—	—	—	—	—
American Indian	42	—	—	—	100	—	—	—	—	—	—	—
European, Northern	241	—	—	—	—	100	—	—	—	—	—	—
European, Eastern	141	—	—	—	—	—	100	—	—	—	—	—
European, Southern	205	—	—	—	—	—	—	100	—	—	—	—
European, Western	1493	—	—	—	—	—	—	—	100	—	—	—
White American	305	—	—	—	—	—	—	—	—	100	—	—

PRIOR MILITARY SERVICE

Percentage of Subjects with Prior Military Service

	<u>Number</u>	<u>Yes</u>	<u>No</u>	<u>No Answer</u>
<u>Total Sample</u>	2993	64.42	35.38	0.20
Experienced Officers	2037	70.79	28.92	0.29
Recruits	956	50.84	49.16	—
<u>Agency</u>				
Police	2060	63.30	36.55	0.15
Sheriff	521	63.53	36.08	0.38
Highway Patrol/State Police	176	65.34	34.66	—
Prison/Penitentiary	236	75.42	24.15	0.42
<u>Region</u>				
San Diego	385	72.99	26.49	0.52
Los Angeles	142	69.01	30.99	—
Phoenix/Tucson	114	71.05	27.19	1.75
Dallas/Fort Worth	157	58.60	40.76	0.64
Houston/Galveston	329	60.18	39.82	—
New Orleans/Baton Rouge	106	65.09	34.91	—
Miami/Fort Lauderdale	174	55.75	43.68	0.57
Atlanta	147	68.71	31.29	—
Washington D.C.	242	51.24	48.76	—
New York	304	48.36	51.64	—
Detroit	80	67.50	32.50	—
Minneapolis/St. Paul	210	83.33	16.67	—
Kansas City	151	66.23	33.77	—
Denver	178	66.85	33.15	—
Helena/Butte	106	72.64	27.36	—
Spokane	51	72.55	27.45	—
Portland	117	66.67	33.33	—
<u>Ethnic Background</u>				
Black	281	58.01	41.64	0.36
Mexican American	98	69.39	30.61	—
Puerto Rican/Cuban	27	59.26	40.74	—
American Indian	42	71.43	28.57	—
European, Northern	241	67.22	32.78	—
European, Eastern	141	60.28	39.72	—
European, Southern	205	54.63	45.37	—
European, Western	1493	65.51	34.43	0.07
White American	305	69.84	30.16	—

HANDEDNESS FOR WEAPON USAGE

Percentage of Subject's Handedness for Weapon Usage

	<u>Number</u>	<u>Right</u>	<u>Left</u>	<u>Ambidextrous</u>	<u>No Answer</u>
<u>Total Sample</u>	2993	88.76	7.25	3.81	0.20
Experienced Officers	2037	87.63	7.41	4.71	0.25
Recruits	956	91.11	6.90	1.88	0.10
<u>Agency</u>					
Police	2060	89.08	7.33	3.40	0.19
Sheriff	521	88.48	6.91	4.22	0.38
Highway Patrol/State Police	176	86.36	7.39	6.25	—
Prison/Penitentiary	236	88.14	7.20	4.66	—
<u>Region</u>					
San Diego	385	87.53	7.27	4.94	0.26
Los Angeles	142	88.73	9.15	1.41	0.70
Phoenix/Tucson	114	91.23	4.39	2.63	1.75
Dallas/Fort Worth	157	88.54	7.01	4.46	—
Houston/Galveston	329	92.71	6.38	0.91	—
New Orleans/Baton Rouge	106	93.40	5.66	0.94	—
Miami/Fort Lauderdale	174	86.21	9.20	4.60	—
Atlanta	147	89.80	5.44	3.40	1.36
Washington D.C.	242	85.95	9.09	4.96	—
New York	304	91.78	7.57	0.66	—
Detroit	80	90.00	7.50	2.50	—
Minneapolis/St. Paul	210	90.48	6.19	3.33	—
Kansas City	151	89.40	4.64	5.96	—
Denver	178	79.78	11.80	8.43	—
Helena/Butte	106	89.62	6.60	3.77	—
Spokane	51	82.35	3.92	13.73	—
Portland	117	86.32	6.84	6.84	—
<u>Ethnic Background</u>					
Black	281	92.17	5.34	2.14	—
Mexican American	98	88.78	7.14	4.08	—
Puerto Rican/Cuban	27	88.89	7.41	3.70	—
American Indian	42	80.95	14.29	4.76	—
European, Northern	241	86.31	8.71	4.98	—
European, Eastern	141	82.27	12.06	5.67	—
European, Southern	205	92.68	5.37	1.95	—
European, Western	1493	88.81	7.23	3.88	0.07
White American	305	89.18	6.56	3.93	0.33

3.3 MEANS AND STANDARD DEVIATIONS OF ALL MEASUREMENTS FOR EACH SAMPLE

This section presents data on the means and standard deviations obtained for all measurements taken from each sample category and subcategory.

This arrangement of the data makes it possible to examine for variations in data obtained on several measurements for different categories and subcategories. For example, if it is shown that the height for a given agency is greater than that for other agencies, it is possible to readily compare the other dimensions across the samples to determine whether corresponding variations exist.

GENERAL SAMPLE

	<u>MEANS</u>		
	<u>Total Sample</u>	<u>Experienced</u>	<u>Recruits</u>
Number	2993	2037	956
Weight	183.68 lb	187.90	174.67
Height	70.12 in	70.28	69.80
Functional Reach	32.67	32.80	32.38
Chest Breadth	13.64	13.80	13.30
Chest Circumference	40.22	40.83	38.90
Waist Circumference	35.67	36.49	33.92
Waist Front	16.27	16.45	15.89
Head Circumference	22.64	22.71	22.48
Hand Circumference	8.44	8.49	8.31
Shoulder Height Sitting	24.22	24.33	23.99
Sitting Height	36.29	36.42	36.01
Knee Height Sitting	22.01	22.06	21.91
Buttock Knee Length	24.21	24.27	24.08
Shoulder Breadth	19.48	19.64	19.13
Head Length	7.80	7.81	7.76
Head Breadth	6.09	6.12	6.03
Face Breadth	5.63	5.67	5.55
Face Length	4.78	4.79	4.74
Lip Length	2.03	2.06	1.98
Hand Length	7.62	7.62	7.60
Forefinger Length	4.97	4.99	4.93
Hand Breadth	3.54	3.55	3.51
Trigger Position	2.66	2.66	2.68
Age	30.71 yr	33.35	25.09
Length of Service	4.82	6.60	1.04

GENERAL SAMPLE

STANDARD DEVIATIONS

	<u>Total Sample</u>	<u>Experienced</u>	<u>Recruits</u>
Number	2993	2037	956
Weight	26.35 lb	27.15	21.98
Height	2.28 in	2.30	2.19
Functional Reach	1.65	1.64	1.65
Chest Breadth	1.04	1.06	0.91
Chest Circumference	3.11	3.15	2.57
Waist Circumference	3.72	3.76	2.96
Waist Front	1.06	1.09	0.87
Head Circumference	0.62	0.61	0.61
Hand Circumference	0.40	0.40	0.38
Shoulder Height Sitting	1.17	1.18	1.10
Sitting Height	1.36	1.38	1.27
Knee Height Sitting	0.99	1.01	0.95
Buttock Knee Length	1.07	1.08	1.04
Shoulder Breadth	1.16	1.17	1.06
Head Length	0.27	0.27	0.28
Head Breadth	0.22	0.22	0.21
Face Breadth	0.24	0.23	0.23
Face Length	0.25	0.25	0.24
Lip Length	0.17	0.17	0.17
Hand Length	0.36	0.36	0.36
Forefinger Length	0.30	0.30	0.29
Hand Breadth	0.17	0.17	0.17
Trigger Position	0.26	0.27	0.25
Age	8.67 yr	9.06	3.71
Length of Service	5.86	6.35	0.67

AGENCY

		<u>MEANS</u>			
	<u>Total Sample</u>	<u>Police</u>	<u>Sheriff</u>	<u>Highway Patrol</u>	<u>Prison/ Penitentiary</u>
Number	2993	2060	521	176	236
Weight	183.68 lb	182.25	188.16	183.73	186.14
Height	70.12 in	70.13	70.13	70.65	69.70
Functional Reach	32.67	32.61	32.77	32.74	32.90
Chest Breadth	13.64	13.61	13.71	13.60	13.75
Chest Circumference	40.22	40.04	40.70	39.97	40.94
Waist Circumference	35.67	35.36	36.50	34.96	37.15
Waist Front	16.27	16.22	16.37	16.14	16.63
Head Circumference	22.64	22.63	22.67	22.61	22.60
Hand Circumference	8.44	8.41	8.47	8.48	8.52
Shoulder Height Sitting	24.22	24.20	24.17	24.47	24.32
Sitting Height	36.29	36.32	36.13	36.49	36.21
Knee Height Sitting	22.01	22.05	21.95	22.17	21.74
Buttock Knee Length	24.21	24.20	24.28	24.29	24.16
Shoulder Breadth	19.48	19.45	19.63	19.36	19.42
Head Length	7.80	7.79	7.81	7.83	7.76
Head Breadth	6.09	6.08	6.09	6.10	6.14
Face Breadth	5.63	5.62	5.66	5.64	5.69
Face Length	4.78	4.78	4.76	4.74	4.78
Lip Length	2.03	2.02	2.02	2.02	2.08
Hand Length	7.62	7.63	7.57	7.59	7.57
Forefinger Length	4.97	4.98	4.95	4.95	4.93
Hand Breadth	3.54	3.54	3.54	3.56	3.55
Trigger Position	2.66	2.67	2.67	2.62	2.64
Age	30.71 yr	29.87	30.54	29.23	39.46
Length of Service	4.82	4.90	3.70	4.34	6.99

AGENCY

STANDARD DEVIATIONS

	<u>Total Sample</u>	<u>Police</u>	<u>Sheriff</u>	<u>Highway Patrol</u>	<u>Prison/ Penitentiary</u>
Number	2993	2060	521	176	236
Weight	26.35 lb	24.90	30.72	23.43	28.88
Height	2.28 in	2.20	2.50	2.03	2.53
Functional Reach	1.65	1.65	1.70	1.48	1.68
Chest Breadth	1.04	1.00	1.19	0.96	1.05
Chest Circumference	3.11	2.94	3.57	2.80	3.45
Waist Circumference	3.72	3.49	4.20	3.37	4.16
Waist Front	1.06	1.02	1.13	0.92	1.26
Head Circumference	0.62	0.61	0.64	0.60	0.66
Hand Circumference	0.40	0.40	0.42	0.40	0.39
Shoulder Height Sitting	1.17	1.15	1.21	1.18	1.16
Sitting Height	1.36	1.33	1.45	1.25	1.39
Knee Height Sitting	0.99	0.96	1.07	0.93	1.10
Buttock Knee Length	1.07	1.05	1.14	0.99	1.12
Shoulder Breadth	1.16	1.11	1.31	1.08	1.20
Head Length	0.27	0.27	0.26	0.29	0.31
Head Breadth	0.22	0.22	0.22	0.22	0.23
Face Breadth	0.24	0.24	0.24	0.24	0.24
Face Length	0.25	0.25	0.25	0.27	0.24
Lip Length	0.17	0.17	0.17	0.18	0.19
Hand Length	0.36	0.35	0.37	0.38	0.40
Forefinger Length	0.30	0.30	0.30	0.31	0.32
Hand Breadth	0.17	0.17	0.18	0.16	0.17
Trigger Position	0.26	0.27	0.26	0.23	0.27
Age	8.67 yr	7.94	8.25	7.07	11.40
Length of Service	5.86	5.99	4.38	6.07	6.70

REGION

MEANS

Total Sample	San Diego		Phoenix/ Tucson		Dallas/ Fort Worth		Houston/ Galveston		New Orleans/ Baton Rouge		Miami / Fort Lauderdale		Atlanta		Washington DC	
	Los Angeles															
Number	2993	385	142	114	157	329	106	174	147	242						
Weight	183.68 lb	184.94	168.21	185.11	188.85	190.42	184.41	181.59	183.49	178.36						
Height	70.12 in	70.63	69.94	70.20	70.60	69.71	69.93	69.89	69.92	70.08						
Functional Reach	32.67	32.55	32.17	32.88	32.19	33.00	32.51	33.08	32.56	32.52						
Chest Breadth	13.64	13.92	13.11	13.80	13.87	13.88	13.14	13.65	13.46	13.42						
Chest Circumference	40.22	40.58	38.72	40.67	41.13	40.69	39.25	40.11	40.18	39.04						
Waist Circumference	35.67	35.62	32.79	36.07	36.78	37.16	35.67	35.13	36.01	33.89						
Waist Front	16.27	16.47	15.82	16.27	16.71	16.29	16.11	16.09	16.55	15.91						
Head Circumference	22.64	22.80	22.35	22.71	22.76	22.67	22.52	22.62	22.68	22.56						
Hand Circumference	8.44	8.46	8.27	8.46	8.54	8.50	8.39	8.43	8.35	8.37						
Shoulder Height Sitting	24.22	24.36	23.97	24.12	24.76	24.04	23.94	24.18	24.05	23.74						
Sitting Height	36.29	36.86	36.32	36.50	36.97	35.55	35.60	36.25	36.32	35.53						
Knee Height Sitting	22.01	22.34	22.03	22.09	22.18	21.59	21.61	22.08	22.11	22.03						
Buttock Knee Length	24.21	24.34	23.88	24.24	24.32	24.15	24.02	24.11	24.30	24.45						
Shoulder Breadth	19.48	19.75	18.99	19.77	19.63	19.50	18.84	19.59	19.37	19.36						
Head Length	7.80	7.83	7.77	7.80	7.83	7.82	7.80	7.75	7.83	7.78						
Head Breadth	6.09	6.13	6.01	6.12	6.11	6.11	6.07	6.08	6.05	6.02						
Face Breadth	5.63	5.66	5.51	5.68	5.70	5.64	5.64	5.60	5.63	5.54						
Face Length	4.78	4.84	4.74	4.73	4.78	4.78	4.70	4.71	4.79	4.71						
Lip Length	2.03	2.07	1.97	2.03	2.06	1.98	1.96	2.02	2.06	2.04						
Hand Length	7.62	7.75	7.59	7.61	7.67	7.52	7.28	7.69	7.65	7.69						
Forefinger Length	4.97	5.12	4.95	5.00	5.07	4.88	4.82	5.01	5.00	4.92						
Hand Breadth	3.54	3.57	3.50	3.57	3.59	3.52	3.50	3.57	3.53	3.54						
Trigger Position	2.66	2.63	2.71	2.72	2.71	2.56	2.59	2.61	2.79	2.67						
Age	30.71 yr	31.39	25.60	30.10	32.84	31.05	26.42	28.87	33.75	25.84						
Length of Service	4.82	5.91	1.06	3.76	6.68	3.95	1.92	3.16	5.82	2.25						

REGION

STANDARD DEVIATIONS

	Total Sample	San Diego	Los Angeles	Phoenix/ Tucson	Dallas/ Fort Worth	Houston/ Galveston	New Orleans/ Baton Rouge	Miami/ Fort Lauderdale	Atlanta	Washington DC
Number	2993	385	142	114	157	329	106	174	147	242
Weight	26.35 lb	22.24	16.76	21.61	27.07	35.30	26.99	24.03	28.90	21.87
Height	2.28 in	2.28	1.96	2.59	2.23	2.53	2.45	2.42	2.11	2.31
Functional Reach	1.65	1.45	1.51	1.66	1.55	1.78	1.55	1.71	1.58	1.56
Chest Breadth	1.04	0.92	0.71	0.86	1.02	1.31	1.01	0.88	1.10	0.88
Chest Circumference	3.11	2.56	1.96	2.45	3.05	4.06	3.16	2.71	3.54	2.62
Waist Circumference	3.72	2.94	2.10	2.91	3.58	4.86	3.54	3.05	4.25	3.06
Waist Front	1.06	0.95	0.77	1.01	1.10	1.28	0.99	1.03	1.22	0.92
Head Circumference	0.62	0.58	0.58	0.63	0.55	0.63	0.64	0.64	0.64	0.62
Hand Circumference	0.40	0.35	0.37	0.39	0.44	0.41	0.40	0.36	0.41	0.39
Shoulder Height Sitting	1.17	1.13	0.96	1.13	1.09	1.13	1.26	1.08	1.19	1.29
Sitting Height	1.36	1.25	1.07	1.26	1.13	1.35	1.47	1.27	1.38	1.43
Knee Height Sitting	0.99	0.96	0.88	1.05	0.95	1.03	0.99	1.00	0.97	1.01
Buttock Knee Length	1.07	1.02	0.94	1.13	1.02	1.23	1.06	1.04	1.00	1.13
Shoulder Breadth	1.16	1.01	0.85	0.88	1.06	1.42	1.13	1.07	1.23	0.99
Head Length	0.27	0.26	0.28	0.26	0.26	0.27	0.30	0.27	0.29	0.27
Head Breadth	0.22	0.21	0.21	0.19	0.19	0.22	0.20	0.21	0.21	0.22
Face Breadth	0.24	0.21	0.22	0.22	0.22	0.26	0.20	0.24	0.23	0.23
Face Length	0.25	0.23	0.26	0.27	0.24	0.25	0.24	0.26	0.25	0.26
Lip Length	0.17	0.16	0.15	0.16	0.17	0.18	0.16	0.16	0.16	0.17
Hand Length	0.36	0.31	0.30	0.37	0.34	0.38	0.30	0.33	0.35	0.38
Forefinger Length	0.30	0.28	0.27	0.29	0.30	0.30	0.29	0.29	0.31	0.31
Hand Breadth	0.17	0.15	0.16	0.17	0.19	0.18	0.16	0.16	0.17	0.16
Trigger Position	0.26	0.27	0.22	0.25	0.26	0.24	0.22	0.23	0.25	0.26
Age	8.67 yr	6.10	3.18	7.16	8.58	10.58	5.26	6.95	11.56	5.35
Length of Service	5.86	5.47	0.46	4.20	5.64	5.60	1.93	4.50	7.15	2.56

REGION

MEANS

	New York	Detroit	Minneapolis/ St. Paul	Kansas City	Denver	Helena/Butte	Spokane	Portland	Total Sample
Number	304	80	210	151	178	106	51	117	2993
Weight	175.61 lb	183.66	190.04	187.29	180.02	187.03	192.08	188.32	183.68
Height	69.58 in	70.36	70.38	70.05	70.08	70.07	71.03	70.63	70.12
Functional Reach	31.77	32.18	33.70	32.84	32.66	33.48	33.91	32.38	32.67
Chest Breadth	13.36	13.39	14.00	13.65	13.47	13.89	13.47	13.66	13.64
Chest Circumference	38.96	39.65	41.41	40.89	40.21	41.22	41.47	40.58	40.22
Waist Circumference	34.40	35.21	36.94	36.81	35.31	37.46	36.56	35.80	35.67
Waist Front	16.04	16.41	16.41	16.45	16.23	16.54	16.26	16.19	16.27
Head Circumference	22.40	22.68	22.77	22.56	22.60	22.67	22.75	22.75	22.64
Hand Circumference	8.26	8.46	8.65	8.44	8.37	8.58	8.72	8.44	8.44
Shoulder Height Sitting	24.05	24.00	24.46	24.43	24.17	25.12	24.50	24.46	24.22
Sitting Height	36.05	36.50	36.49	36.58	36.33	36.59	36.74	36.86	36.29
Knee Height Sitting	21.85	22.32	22.08	22.11	22.10	21.42	21.95	22.32	22.01
Buttock Knee Length	23.97	24.45	24.37	24.19	24.15	24.04	24.67	24.21	24.21
Shoulder Breadth	19.03	19.36	19.79	19.60	19.56	19.51	19.69	19.67	19.48
Head Length	7.74	7.79	7.82	7.78	7.75	7.81	7.90	7.86	7.80
Head Breadth	6.03	6.06	6.17	6.10	6.04	6.19	6.24	6.12	6.09
Face Breadth	5.58	5.61	5.69	5.65	5.62	5.74	5.73	5.65	5.63
Face Length	4.78	4.80	4.81	4.76	4.76	4.81	4.81	4.83	4.78
Lip Length	1.98	2.10	2.01	1.97	2.08	2.13	2.11	2.00	2.03
Hand Length	7.61	7.75	7.60	7.62	7.64	7.35	7.49	7.63	7.62
Forefinger Length	4.94	5.04	4.94	4.97	4.93	4.84	4.93	5.02	4.97
Hand Breadth	3.50	3.52	3.55	3.53	3.52	3.56	3.57	3.52	3.54
Trigger Position	2.69	2.92	2.60	2.72	2.74	2.55	2.59	2.61	2.66
Age	27.18 yr	30.56	37.51	32.67	29.86	35.86	34.69	33.72	30.71
Length of Service	3.11	5.44	10.51	5.68	3.56	5.76	8.37	8.18	4.82

REGION

STANDARD DEVIATIONS

	New York	Detroit	Minneapolis/ St. Paul	Kansas City	Denver	Helena/Butte	Spokane	Portland	Total Sample
Number	304	80	210	151	178	106	51	117	2993
Weight	22.12 lb	23.64	23.59	30.51	24.03	27.81	26.12	26.30	26.35
Height	1.87 in	1.89	2.02	2.27	2.22	2.44	1.83	2.36	2.28
Functional Reach	1.46	1.36	1.54	1.68	1.48	1.70	1.41	1.54	1.65
Chest Breadth	0.92	0.98	0.98	1.07	1.04	1.06	1.04	0.98	1.04
Chest Circumference	2.58	3.02	2.86	3.33	3.01	3.26	3.37	2.79	3.11
Waist Circumference	3.15	2.85	3.37	4.00	3.40	4.24	3.80	3.44	3.72
Waist Front	0.90	0.93	1.06	1.08	1.03	1.05	1.03	1.02	1.06
Head Circumference	0.57	0.60	0.59	0.58	0.55	0.70	0.67	0.66	0.62
Hand Circumference	0.37	0.40	0.41	0.37	0.38	0.37	0.39	0.38	0.40
Shoulder Height Sitting	1.02	1.18	1.10	1.14	1.11	1.13	1.11	1.17	1.17
Sitting Height	1.20	1.24	1.14	1.24	1.30	1.33	1.11	1.26	1.36
Knee Height Sitting	0.84	0.88	0.88	1.02	0.92	1.10	0.87	1.01	0.99
Buttock Knee Length	0.94	0.89	1.00	1.07	0.98	1.13	0.99	1.19	1.07
Shoulder Breadth	1.06	1.20	1.10	1.31	1.14	1.15	1.45	1.07	1.16
Head Length	0.28	0.25	0.27	0.26	0.25	0.31	0.28	0.29	0.27
Head Breadth	0.23	0.22	0.22	0.22	0.23	0.24	0.26	0.21	0.22
Face Breadth	0.24	0.20	0.24	0.24	0.22	0.25	0.28	0.23	0.24
Face Length	0.25	0.23	0.27	0.26	0.22	0.25	0.28	0.25	0.25
Lip Length	0.17	0.18	0.17	0.16	0.17	0.16	0.13	0.17	0.17
Hand Length	0.33	0.33	0.33	0.37	0.32	0.37	0.34	0.37	0.36
Forefinger Length	0.27	0.25	0.29	0.30	0.27	0.29	0.32	0.29	0.30
Hand Breadth	0.17	0.19	0.16	0.17	0.15	0.15	0.18	0.15	0.17
Trigger Position	0.29	0.24	0.24	0.26	0.27	0.25	0.26	0.22	0.26
Age	6.26 yr	7.67	9.78	9.63	6.19	11.50	9.03	8.38	8.67
Length of Service	4.97	6.82	7.80	5.84	3.79	5.44	7.64	7.32	5.86

ETHNIC BACKGROUND

MEANS

	Total Sample	Black	Mexican American	Puerto Rican/ Cuban	American Indian	European, Northern	European, Eastern	European, Southern	European, Western	White American
Number	2993	281	98	27	42	241	141	205	1493	305
Weight	183.68 lb	185.20	180.97	175.89	187.90	185.19	181.66	178.52	183.47	187.04
Height	70.12 in	70.20	68.31	68.71	69.57	70.47	70.17	69.17	70.21	70.63
Functional Reach	32.67	33.28	32.41	31.69	32.35	32.99	32.61	31.91	32.70	32.46
Chest Breadth	13.64	13.37	13.85	13.42	14.09	13.70	13.44	13.52	13.64	13.87
Chest Circumference	40.22	39.06	41.06	39.38	41.28	40.70	39.79	39.71	40.29	40.59
Waist Circumference	35.67	34.36	36.37	34.85	36.76	35.96	35.19	35.13	35.83	36.13
Waist Front	16.27	15.98	16.27	15.90	16.39	16.29	16.17	16.05	16.31	16.50
Head Circumference	22.64	22.80	22.47	22.47	22.64	22.66	22.51	22.50	22.62	22.78
Hand Circumference	8.44	8.49	8.31	8.18	8.44	8.50	8.42	8.36	8.43	8.49
Shoulder Height Sitting	24.22	23.31	23.86	23.66	24.43	24.49	24.28	23.91	24.35	24.47
Sitting Height	36.29	35.12	35.59	35.56	36.14	36.64	36.39	35.94	36.41	36.83
Knee Height Sitting	22.01	22.57	21.41	21.70	21.76	22.04	21.92	21.68	21.95	22.27
Buttock Knee Length	24.21	25.07	23.62	23.72	24.03	24.25	24.11	23.80	24.15	24.31
Shoulder Breadth	19.48	19.50	19.67	19.17	19.63	19.59	19.40	19.29	19.42	19.68
Head Length	7.80	7.84	7.61	7.75	7.79	7.80	7.75	7.75	7.80	7.84
Head Breadth	6.09	6.04	6.13	6.10	6.16	6.09	6.10	6.05	6.10	6.11
Face Breadth	5.63	5.60	5.74	5.57	5.73	5.63	5.61	5.60	5.63	5.64
Face Length	4.78	4.83	4.81	4.76	4.73	4.75	4.76	4.81	4.76	4.80
Lip Length	2.03	2.13	2.05	1.98	2.03	2.01	2.01	1.98	2.01	2.04
Hand Length	7.62	7.93	7.51	7.59	7.55	7.54	7.58	7.56	7.57	7.70
Forefinger Length	4.97	5.05	4.79	5.02	4.98	4.94	4.93	4.97	4.94	5.09
Hand Breadth	3.54	3.58	3.47	3.49	3.53	3.54	3.52	3.52	3.53	3.57
Trigger Position	2.66	2.74	2.61	2.67	2.68	2.65	2.67	2.65	2.65	2.65
Age	30.71 yr	29.57	29.55	27.62	30.02	31.90	29.14	27.99	31.16	31.45
Length of Service	4.82	3.20	3.14	1.59	4.24	5.95	4.21	3.20	5.16	5.46

ETHNIC BACKGROUND

STANDARD DEVIATIONS

	Total Sample	Black	Mexican American	Puerto Rican/Cuban	American Indian	European, Northern	European, Eastern	European, Southern	European, Western	White American
Number	2993	281	98	27	42	241	141	205	1493	305
Weight	26.35 lb	30.08	28.33	22.86	37.15	25.52	23.49	21.97	26.28	24.35
Height	2.28 in	2.26	1.75	1.58	2.51	2.41	2.05	1.96	2.22	2.29
Functional Reach	1.65	1.75	1.69	1.39	1.63	1.73	1.56	1.44	1.63	1.41
Chest Breadth	1.04	0.99	1.23	0.72	1.45	1.00	0.95	0.94	1.02	1.02
Chest Circumference	3.11	3.12	3.73	2.43	4.51	2.97	2.74	2.62	3.06	3.00
Waist Circumference	3.72	4.07	4.44	2.60	5.48	3.59	3.24	3.04	3.71	3.42
Waist Front	1.06	0.99	1.17	0.64	1.32	1.01	1.07	0.88	1.07	1.02
Head Circumference	0.62	0.66	0.63	0.71	0.69	0.60	0.59	0.60	0.61	0.60
Hand Circumference	0.40	0.43	0.36	0.40	0.48	0.38	0.46	0.36	0.40	0.37
Shoulder Height Sitting	1.17	1.17	1.06	0.78	1.31	1.23	1.04	1.03	1.11	1.10
Sitting Height	1.36	1.39	1.16	1.00	1.63	1.28	1.19	1.13	1.25	1.34
Knee Height Sitting	0.99	0.96	0.82	0.71	0.97	1.02	0.89	0.88	0.98	0.96
Buttock Knee Length	1.07	1.11	0.84	0.91	1.21	1.09	0.99	0.90	1.02	1.02
Shoulder Breadth	1.16	1.19	1.19	0.97	1.69	1.11	1.07	1.05	1.15	1.14
Head Length	0.27	0.29	0.27	0.32	0.30	0.25	0.25	0.27	0.27	0.26
Head Breadth	0.22	0.21	0.22	0.18	0.22	0.23	0.24	0.23	0.23	0.21
Face Breadth	0.24	0.22	0.23	0.28	0.28	0.23	0.24	0.24	0.24	0.22
Face Length	0.25	0.25	0.22	0.23	0.21	0.26	0.23	0.24	0.26	0.23
Lip Length	0.17	0.16	0.16	0.17	0.11	0.17	0.17	0.16	0.17	0.16
Hand Length	0.36	0.35	0.28	0.28	0.33	0.36	0.32	0.31	0.34	0.35
Forefinger Length	0.30	0.30	0.23	0.32	0.29	0.30	0.31	0.28	0.29	0.31
Hand Breadth	0.17	0.17	0.16	0.15	0.22	0.16	0.17	0.17	0.16	0.16
Trigger Position	0.26	0.30	0.27	0.23	0.31	0.26	0.27	0.26	0.26	0.26
Age	8.67 yr	7.32	7.48	3.67	7.39	8.90	8.09	6.80	9.33	7.15
Length of Service	5.86	4.82	4.79	1.52	4.69	5.96	5.73	4.55	6.22	5.17

4.0 SHORT-FORM SURVEY RESULTS

This section presents the results obtained from the short-form survey which was used to collect data on the height, weight, and age of 10,058 law enforcement officers throughout the United States.

Section 4.1 permits, for each measurement, comparison of the summary statistics of the mean, standard deviation, and range obtained for the total sample as well as for each of the sample groupings.

Section 4.2 permits, for each of the sample groupings, the ready comparison of the means and standard deviations obtained on all the measurements.

The sample groupings into which the data were analyzed were by agency, region, reporting procedure, and sex:

The data were analyzed by agency when data were obtained from police, sheriffs, and prison guards.

The data were analyzed by region when data were obtained from cities or institutions and the sample was complete for the entire department (for example, a computer printout of all officers) or was complete for one or more substations or groupings of officers. This was done because these samples would presumably be free of a sampling bias.

The data were analyzed by reporting procedure when it was possible to identify the data as being from individual respondents, or from a listing or computer printout. This was done because, whereas the individual respondents were giving their own estimates of their measurements, those recorded by a listing or by a computer printout might or might not have been estimates — they could have been the result of actual measurements and hence would be free of possible subjective errors.

The data were analyzed by sex when the data included first names and it was possible to identify the respondent as being a male or female. When no name was entered, it was impossible to determine the distribution. Data on Spanish-surnamed males was computed separately because it was the only identifiable ethnic group which could be used to supplement data collected by the body measurement survey.

4.1 SUMMARY DATA FOR EACH MEASUREMENT BY SAMPLE GROUPINGS

This section presents data on the mean, standard deviation, and range obtained for each measurement from the sample groupings. In addition, the number of law enforcement officers measured for each of the sample groupings is indicated.

This arrangement of the data makes it possible to determine, for a given measurement, variations in average dimensions for different sample subgroupings. Of particular interest are the similarities and variations in the data obtained for the different regions in which complete sampling was possible.

<u>HEIGHT</u>						
	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>
		mm	in.	mm	in.	mm
<u>Total Sample</u>	10,058	1801.76	70.94	58.12	2.29	1520-2104
<u>Agency</u>						
Police	9066	1802.55	70.97	57.53	2.27	1520-2079
Sheriff	374	1810.84	71.29	57.45	2.26	1596-2104
Prison Guard	618	1794.78	70.66	66.54	2.62	1545-2053
<u>Region</u>						
Seattle	1038	1813.73	71.41	48.09	1.89	1647-2003
Spokane	203	1817.63	71.56	51.79	2.04	1647-2003
Kansas City	394	1798.47	70.81	50.04	1.97	1698-2003
St. Louis	2202	1801.48	70.92	59.59	2.35	1520-2079
Columbus	753	1793.58	70.61	52.73	2.08	1596-2003
Washington, D. C.	288	1793.58	70.61	59.53	2.34	1571-1977
Leavenworth	403	1788.43	70.41	64.98	2.56	1571-2003
Los Angeles Police Academy	631	1796.64	70.73	61.06	2.40	1520-2053
Other Cities	4146	1804.45	71.04	59.67	2.35	1520-2104
<u>Reporting Procedure</u>						
By Individual Respondants	3962	1805.73	71.09	59.17	2.33	1520-2104
Listing	675	1796.32	70.72	60.47	2.38	1520-2053
Computer Printout	5421	1800.71	70.89	57.05	2.25	1520-2079
<u>Sex</u>						
Unknown Distribution	5154	1803.94	71.02	56.96	2.24	1520-2079
Male	4808	1801.84	70.94	58.69	2.31	1520-2104
Female	37	1691.50	66.59	59.78	2.35	1571-1850
Spanish Surnamed Male	59	1776.69	69.95	49.14	1.93	1698-1901

WEIGHT

	Number	<u>Mean</u>		<u>SD</u>		<u>Range</u>
		kg	lb	kg	lb	lb
<u>Total Sample</u>	10,058	83.33	183.71	11.06	24.39	109-319
<u>Agency</u>						
Police	9066	83.19	183.41	10.85	23.91	109-319
Sheriff	374	85.95	189.49	13.80	30.43	124-319
Prison Guard	618	83.74	184.62	12.13	26.73	124-284
<u>Region</u>						
Seattle	1038	82.22	181.26	9.25	20.39	129-254
Spokane	203	83.00	182.98	10.53	23.21	124-279
Kansas City	394	81.14	178.88	8.55	18.85	129-234
St. Louis	2202	82.62	182.14	10.66	23.50	109-319
Columbus	753	86.27	190.19	11.28	24.86	109-304
Washington, D. C.	288	80.47	177.41	9.21	20.31	114-244
Leavenworth	403	83.31	183.67	12.19	26.87	124-284
Los Angeles Police Academy	631	78.43	172.91	7.88	17.38	134-244
Other Cities	4146	84.62	186.55	11.90	26.23	109-319
<u>Reporting Procedure</u>						
By Individual Respondants	3962	84.69	186.70	11.80	26.02	109-319
Listing	675	81.96	180.69	11.08	24.42	109-294
Computer Printout	5421	82.50	181.89	10.38	22.89	109-319
<u>Sex</u>						
Unknown Distribution	5154	84.18	185.59	11.25	24.80	109-304
Male	4808	82.63	182.16	10.72	23.62	114-319
Female	37	63.56	140.14	6.04	13.31	109-174
Spanish Surnamed Male	59	78.45	172.95	8.04	17.73	134-224

<u>AGE</u>				
	Number	<u>Mean</u> Years	<u>SD</u> Years	<u>Range</u> Years
<u>Total Sample</u>	10,058	33.96	9.73	18-68
<u>Agency</u>				
Police	9066	33.59	9.46	19-68
Sheriff	374	32.55	9.44	20-66
Prison Guard	618	40.27	11.40	18-67
<u>Region</u>				
Seattle	1038	36.28	8.12	22-62
Spokane	203	32.95	9.01	21-61
Kansas City	394	34.38	8.32	23-65
St. Louis	2202	35.96	11.03	21-68
Columbus	753	35.64	8.99	22-65
Washington, D. C.	288	29.65	5.86	21-54
Leavenworth	403	42.98	10.21	21-67
Los Angeles Police Academy	631	25.81	3.28	22-38
Other Cities	4146	32.68	9.17	18-66
<u>Reporting Procedure</u>				
By Individual Respondants	3962	32.47	9.11	18-66
Listing	675	32.72	8.47	21-64
Computer Printout	5421	35.20	10.13	21-68
<u>Sex</u>				
Unknown Distribution	5154	33.87	9.01	18-66
Male	4808	34.14	10.41	18-67
Female	37	36.35	13.51	22-68
Spanish Surnamed Male	59	26.03	3.19	22-35

4.2 MEANS AND STANDARD DEVIATIONS OF ALL MEASUREMENTS FOR EACH SAMPLE GROUPING

This section presents data on the means and standard deviations obtained for all measurements taken from each sample grouping.

MEANS

	<u>Number</u>	<u>Age</u>	<u>Weight</u>	<u>Height</u>
<u>Total Sample</u>	10,058	33.96 yr	183.71 lb	70.94 in
<u>Agency</u>				
Police	9066	33.59	183.41	70.97
Sheriff	374	32.55	189.49	71.29
Prison	618	40.27	184.62	70.66
<u>Region</u>				
Seattle	1038	36.28	181.26	71.41
Spokane	203	32.95	182.98	71.56
Kansas City	394	34.38	178.88	70.81
St. Louis	2202	35.96	182.14	70.92
Columbus	753	35.64	190.19	70.61
Washington, D. C.	288	29.65	177.41	70.61
Leavenworth	403	42.98	183.67	70.41
Los Angeles Police Academy	631	25.81	172.91	70.73
Other	4146	32.68	186.55	71.04
<u>Reporting Procedure</u>				
Individual Respondants	3962	32.47	186.70	71.09
Listing	675	32.72	180.69	70.72
Computer Printout	5421	35.20	181.89	70.89
<u>Sex</u>				
Unknown Distribution	5154	33.87	185.59	71.02
Male	4808	34.14	182.16	70.94
Female	37	36.35	140.14	66.59
Spanish Surnamed Male	59	26.03	172.95	69.95

STANDARD DEVIATIONS

	<u>Number</u>	<u>Age</u>	<u>Weight</u>	<u>Height</u>
<u>Total Sample</u>	10,058	9.73 yr	24.39 lb	2.29 in
<u>Agency</u>				
Police	9066	9.46	23.91	2.27
Sheriff	374	9.44	30.43	2.26
Prison	618	11.40	26.73	2.62
<u>Region</u>				
Seattle	1038	8.12	20.39	1.89
Spokane	203	9.01	23.21	2.04
Kansas City	394	8.32	18.85	1.97
St. Louis	2202	11.03	23.50	2.35
Columbus	753	8.99	24.86	2.08
Washington, D.C.	288	5.86	20.31	2.34
Leavenworth	403	10.21	26.87	2.56
Los Angeles Police Academy	631	3.28	17.38	2.40
Other	4146	9.17	26.23	2.35
<u>Reporting Procedure</u>				
Individual Respondants	3962	9.11	26.02	2.33
Listing	675	8.47	24.42	2.38
Computer Printout	5421	10.13	22.89	2.25
<u>Sex</u>				
Unknown Distribution	5154	9.01	24.80	2.24
Male	4808	10.41	23.62	2.31
Female	37	13.51	13.31	2.35
Spanish Surnamed Male	59	3.19	17.73	1.93

5.0 ADDITIONAL DATA ANALYSIS

The data base developed by this study has been preserved on computer cards, tapes, and printouts. It is being retained by the Human Factors Division of the Naval Electronics Laboratory Center in San Diego, California, and has been made available to anthropometric data banks in other parts of this country.

If specific computations are desired to be made with the data, it is possible to use the data source to generate the required answers. Because the needs of potential users of this anthropometric data source are numerous, it would be prohibitively expensive to exhaust all possible treatments of the data which might conceivably be of some use. It was decided, therefore, to present only the basic standard statistical results – those statistical treatments utilized in reports of most major anthropometric surveys.

Three additional treatments of the data which have been made by this study are discussed in the following sections. These include: selected bivariate tables, comparisons between estimated and measured height and weight, and a comparison of the results obtained from the short-form survey with that obtained from the body measurement survey.

5.1 SELECTED BIVARIATE TABLES

Bivariate tables depict the relation between two measurements. Tables 4 and 5 are representative of tables included in other anthropometric studies. Table 4 shows measured height versus age and table 5 shows measured weight versus age for over 350 subjects whose measurements were obtained during the body measurement survey.

Bivariate, trivariate, and other multivariate tables are frequently used in anthropometric data processing to portray relationships between body dimensions. These tables are useful to designers and manufacturers of equipment and aid in determining the sizing for products. For example, shoe sizes are determined by bivariate tables of foot length and foot width. For the purpose of sizing body gear and protective equipment for law enforcement officers, bivariate and multivariate tables based on the data collected in this survey will be used. The data base, preserved on cards and tapes, will permit specially constructed bivariate and multivariate tables to be computed to meet the specific needs of interested designers and manufacturers as these needs arise.

TABLE 4. MEASURED HEIGHT VERSUS AGE.

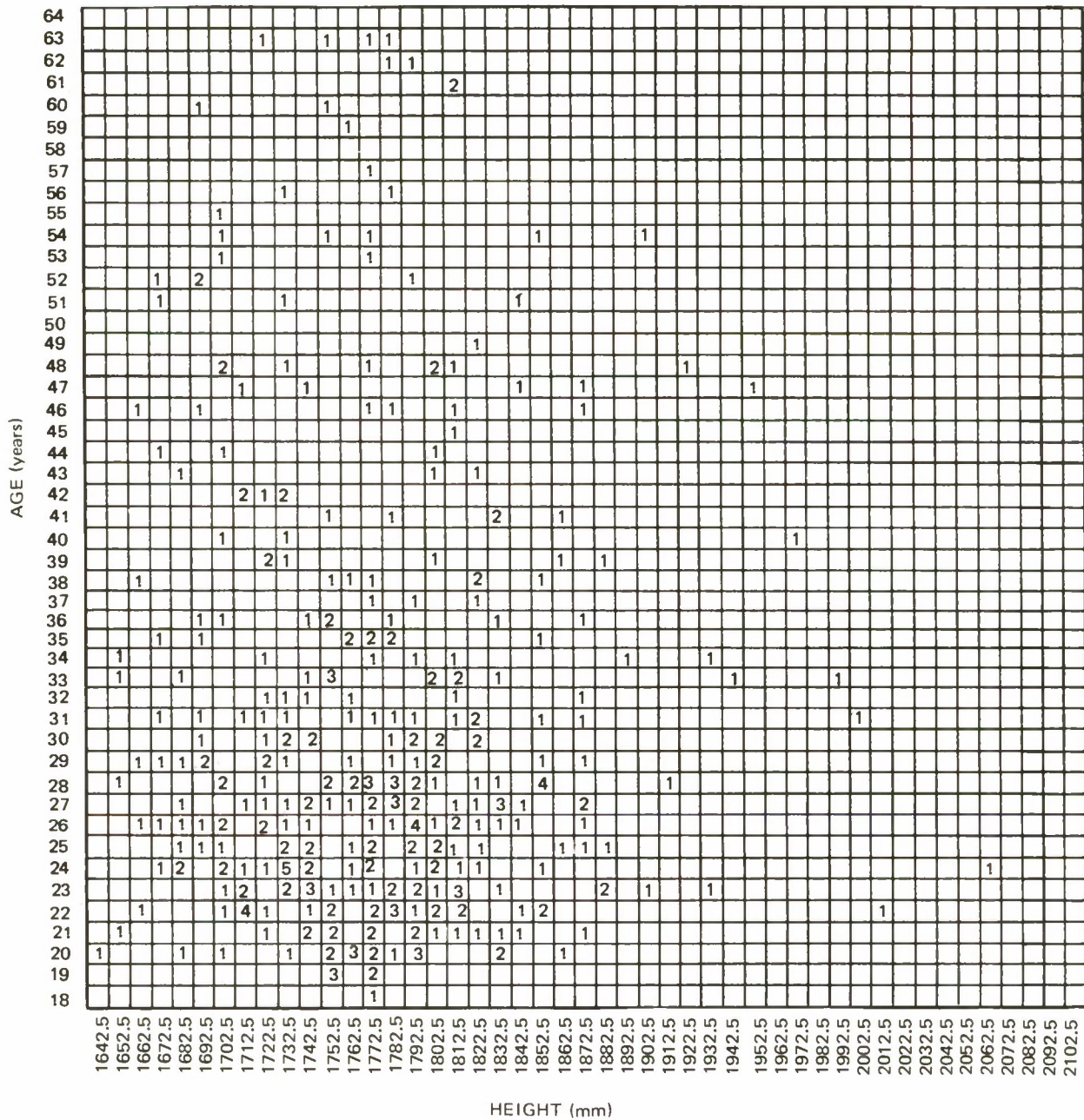
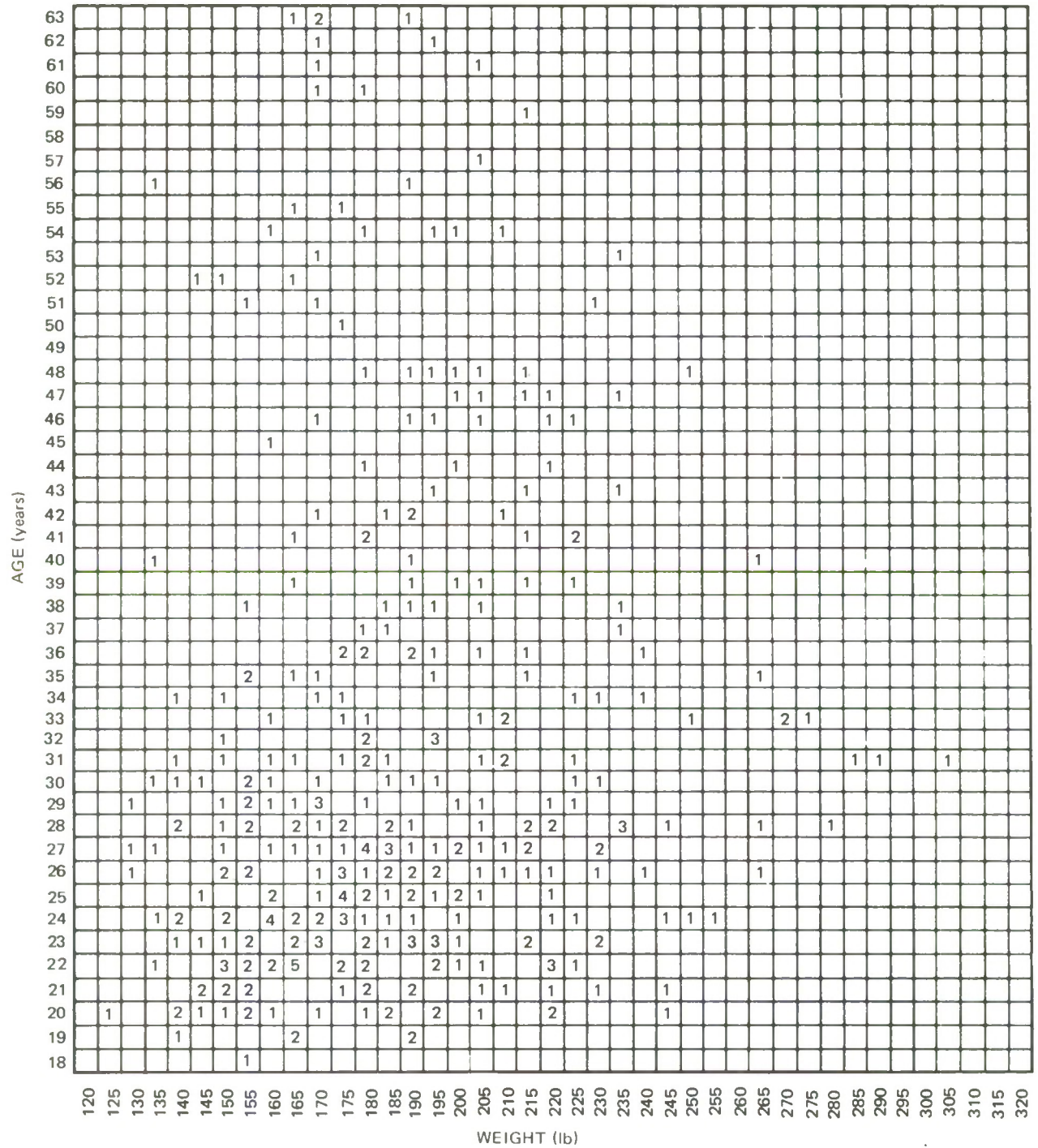


TABLE 5. MEASURED WEIGHT VERSUS AGE.



5.2 ESTIMATED AND MEASURED HEIGHT AND WEIGHT

It is sometimes suggested that anthropometric surveys need not measure the height and weight of subjects because they already know their measurements and may report them correctly. The following tables depict measured height versus estimated height (table 6) and measured weight versus estimated weight (table 7) for over 350 subjects whose data were obtained during the body measurement survey.

Inspection of tables 6 and 7 reveals that subjects generally overestimate their height by 26 mm (approximately 1 inch) but estimate their weight very nearly within a pound (on the average, they overestimate their weight by 0.4 pound). Considering that body weight may vary by as much as 5 pounds during the course of a day, the agreement is very close indeed.

These findings parallel discoveries made in earlier anthropometric surveys. An anthropometric survey of Army men found that they overestimated their height by approximately 1 inch and overestimated their weight by 2 pounds. Similar findings were obtained in a survey of Air Force women with regard to height, although they tended to underestimate their weight (table 8).

Although the estimates of height and weight are not accurate, they are consistently close to the actual value. This finding suggests that by employing a correction factor of approximately 1 inch for height, and as little as 2 pounds for weight, self-reporting may be used to obtain a reasonable approximation of the distribution of these characteristics in a sample group of males.

This finding, that for reasonable approximations self-reporting of height and weight may be employed, is of importance to any unmeasured department or agency which would wish to obtain dimensions for other body measurements for its men. Estimates may be made by constructing a sample from the data bank matched in terms of the key factors of height, weight, and age. (Section 7.0 contains a more complete discussion of this procedure.) The adequacy of self-reporting indicates that a department or agency, could, at minimal cost or minimal expenditure of time, obtain a matched sample and derive reasonably accurate estimates for the dimensions of its own particular staff of officers.

TABLE 6. MEASURED HEIGHT VERSUS ESTIMATED HEIGHT.

[illegible]

TABLE 7. MEASURED WEIGHT VERSUS ESTIMATED WEIGHT.

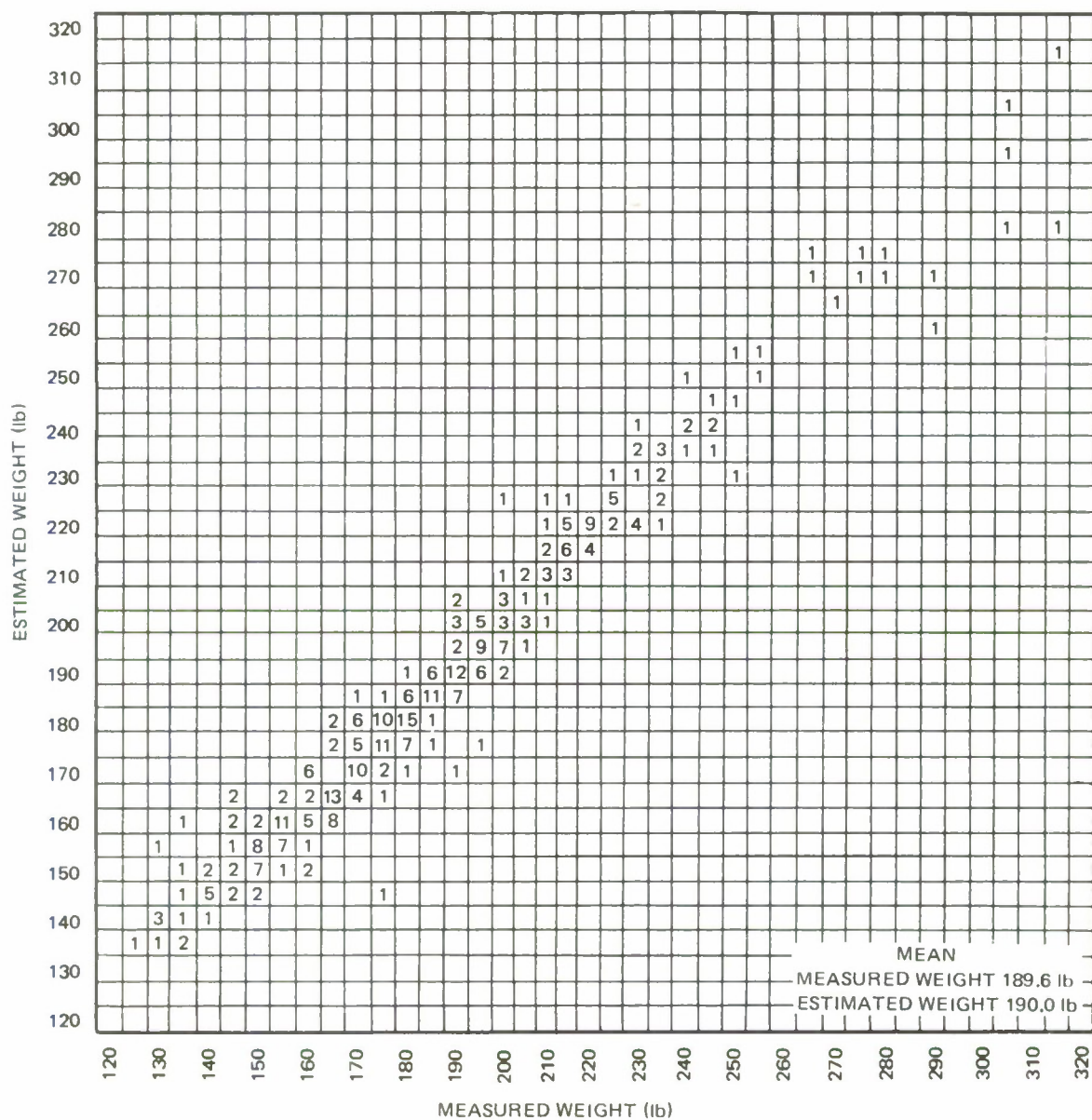


TABLE 8. DIFFERENCES BETWEEN MEASURED AND ESTIMATED
BODY DIMENSIONS.

	Height (in)		
	Measured	Estimated	Difference
Law Enforcement Officers	70.04	71.07	1.03
Army Men*	68.71	69.81	0.90
Air Force Women**	63.82	64.80	0.98

	Weight (lb)		
	Measured	Estimated	Difference
Law Enforcement Officers	189.60	190.00	0.40
Army Men*	159.10	161.38	2.28
Air Force Women**	125.97	124.15	-1.82

*White, R. M. and Churchill, Edmund, "The Body Size of Soldiers," U. S. Army
Natick Laboratories, Technical Report 72-51-CE, p 266, December 1971

**Clauser, C. E., et al, "Anthropometry of Air Force Women," Aerospace Medical
Research Laboratory, AMRL-TR-70-5, April 1972

5.3 COMPARISON OF SHORT-FORM SURVEY WITH BODY MEASUREMENT DATA

The results obtained with the short-form survey were compared with those obtained by conducting actual body measurements. These comparisons were made for the total sample and also for the agencies and regions for which both sets of data had been obtained. Table 9 presents the results for height, weight, and age comparisons. For the most part, the heights obtained with the short-form survey and with actual measurements were within 1 inch of each other; the weights were within 2 pounds. When the sample size was small, somewhat larger variations were found.

The close relation between the statistics obtained by the short-form survey and the body measurement survey suggests that the body measurement survey obtained measurements of men who were representative of their departments and agencies. It also indicates that self-reporting techniques may be used to obtain reasonably accurate matched samples for unmeasured departments.

Some of the variations in the statistics obtained with the short-form survey and the body measurement survey might be due to population variables, eg, the body measurement survey may have included a greater percentage of younger recruits. However, most of the variations are probably due to problems with the accuracy of the reporting procedures.

Table 10 permits examination of the variations arising from different reporting procedures for height and weight. Although the data obtained by the different reporting procedures were from different samples of the law enforcement population, the sizes of the samples were sufficiently large that no significant differences would have been expected. The differences in data which were obtained must be attributed to differences in the reporting procedure. In general, the average height computed for the short-form data was 0.82 inch greater than that measured. The average weight differed by 0.03 pound. When the data obtained by the short-form survey were separated into that which was definitely self-reported by individual respondents (the handwriting on each form was different), the differences are 0.97 inch in height and 3.02 pounds in weight. This finding compares very closely with the anticipated correction factors.

When the data obtained by the short-form were separated into that which appeared to be obtained from a listing (the handwriting on each form was the same) or from a computer printout, the difference in heights was less (0.70 and 0.77 inch), and the difference in weights was opposite from that anticipated (-2.99 and -1.79 pounds).

The reason for the difference in heights being less than anticipated may be because some of the original data compiled for the listings or printouts may have been self-reported (requiring a 1 inch correction factor), whereas other data may have been actually measured (requiring no correction factor).

The reason for the difference between the weights actually measured and those obtained from the listings and computer printouts may be that these lists may not have been recently updated and, as a person increases in age, he will generally increase in weight. It may be that some of the listings had recorded the weight at the time the officer first joined the force, whereas others had a more frequent updating. The height data would change relatively little during the course of an officer's career, whereas the weight data could change fairly substantially and could account for the underestimations arising from the listings and printouts.

The findings depicted in these tables indicate that while recorded heights and weights may be used to obtain a reasonably close matched sample with the appropriate correction factors, care must be taken to determine the source of the original data (whether it was self-reported or based on actual measurements) and at what intervals the records have been updated.

TABLE 9. SHORT-FORM SURVEY DATA VERSUS BODY MEASUREMENT SURVEY DATA.

	MEANS					
	Number		Height (in)		Weight (lb)	
	Short-Form	Body Measurement	Short-Form	Body Measurement	Short-Form	Body Measurement
Total Sample	10,058	2991	70.94	70.12	183.71	183.68
Agency						
Police	9066	2059	70.97	70.13	183.41	182.25
Sheriff	374	570	71.29	70.13	189.49	188.16
Prison	618	236	70.66	69.70	184.62	186.14
Region						
Spokane	203	51	71.56	71.03	182.98	192.08
Kansas City	394	151	70.81	70.05	178.88	187.29
Washington, D. C.	288	242	70.61	70.08	177.41	178.36
Los Angeles	631	142	70.73	69.94	172.91	168.21
					32.95	34.69
					34.38	32.67
					29.65	25.84
					25.81	25.60

TABLE 10. COMPARISON OF RESULTS OBTAINED BY DIFFERENT TYPES OF REPORTING PROCEDURES FOR HEIGHT AND WEIGHT.

	Height		Difference (in)	Weight		Difference (lb)
	Reported (in)	Measured (in)		Reported (lb)	Measured (lb)	
Total	70.94	70.12	.82	183.71	183.68	.03
Individual respondents	71.09		.97	186.70		3.02
Listing	70.72		.60	180.69		-2.99
Computer printout	70.89		.77	181.89		-1.79
Anticipated correction factor*			1.00			max 2.00

* See SECTION 6.2

6.0 RELATION TO OTHER ANTHROPOMETRIC STUDIES

Anthropometric studies, although not frequently conducted, have been performed on large numbers of personnel, primarily those of the military establishments.

6.1 BACKGROUND

Since 1946 there have been fewer than 20 large scale anthropometric studies of the United States military and civilian populations. The samples have included more than 65,000 subjects. Table 11 lists some of the major studies of males.

TABLE 11. ANTHROPOMETRIC SURVEYS OF MALES.

Series	Date	No	Mean Age	Measurements	Reference
1 US Army Separates	1946	24,500	24.3	66	Newman and White, 1951
2 US Army Aviators	1959	500	30.2	44	White, 1961
3 USAF Flying Personnel	1950	4,063	27.9	132	Hertzberg et al, 1954
4 USAF Basic Trainees	1952	3,332	18.9	60	Daniels et al, 1953
5 US Navy Pilots	1960	1,190	—	25	Gifford, 1960
6 US Naval Aviators	1964	1,549	29.6	96	Gifford et al, 1965
7 US Civilian Men (Total Series)	1960-62	3,091	(44)	18	Stoudt et al, 1965; 1970
8 US Civilian Men	1960-62	411	(21)	18	Stoudt et al, 1965; 1970
9 US Civilian Men	1960-62	675	(30)	18	Stoudt et al, 1965; 1970
10 FAA ATC Trainees	1961	684	27.9	64	Snow and Snyder, 1965
11 US Army (Total Series)	1966	6,682	22.2	70	White, 1971
12 US Marine Corps	1966	2,008	20.9	70	White and Churchill
13 US Navy Recruits	1966	4,095	19.9	70	(in preparation) White and Churchill (in preparation)
14 USAF Flying Personnel	1967	2,420	30.0	187	Clauser et al (in preparation)
15 USAF Basic Trainees	1965	2,632	19.3	158	Clauser et al (in preparation)
16 US Army DRAGON Study	1967	254	23.3	15	Jantz et al, 1967
17 US Army Aviators	1968	1,640	22.0	9	Schane et al, 1969
18 US Army Aviators	1970	1,482	26.2	85	Churchill et al, 1971

6.2 RELATED STUDIES

Most of the earlier studies involved large numbers of measured variables. As many as 187 dimensions have been taken by some studies. Unfortunately, with physical anthropology, as with many fields, some of the terms are poorly defined and there is considerable room for individual differences between measurers working with the same subjects. In making comparisons between studies, it is necessary to be certain that similar measurements have been taken.

The data from many of these earlier anthropometric studies are available for computer processing. From such large samples of measurements as exist in the data banks, it is possible to obtain a sample closely matched to virtually any given group in terms of a variety of key parameters (as is discussed in detail in section 7.1).

6.3 COMPARISON DATA

Some of the general results obtained in this body measurement survey have been compared with results obtained by other anthropometric surveys employing the same (or similar) measurements. Table 12 permits comparisons between this study and several earlier ones in terms of most of the critical body dimensions measured for the law enforcement officer data base.

Regarding the means for some of the measurements contained in table 12, it is evident that there are rather significant differences between the measurements obtained for different groups. The means for the law enforcement survey are consistently greater than those for other groups. Yet there is close similarity in terms of the standard deviations computed for all the studies. These findings suggest that the sample for the law enforcement officer survey was drawn from a population with physical characteristics overlapping, but nevertheless, decidedly different from those examined in other surveys.

The finding that there is a marked difference between the law enforcement population surveyed and those examined earlier is confirmed by the statistics presented in table 13. In this table, for most of the six body dimensions for which extensive anthropometric data exists in other studies, the means obtained for the law enforcement officers exceeded those of all other studies.

Careers in law enforcement attract personnel whose physical attributes differ from those who go into the military or other occupations. This survey of law enforcement officers has provided data unique for law enforcement agency personnel.

In addition to benefiting law enforcement personnel, the newly developed data on law enforcement officers expands the usefulness of already developed anthropometric data banks. The new data provide additional information about the anthropometry of a segment of the population which has been previously unmeasured. It has increased the knowledge about the physical characteristics of men in the upper percentiles of most body dimensions. It has also provided increased information about the physical attributes of men from different ethnic backgrounds. The increased knowledge that this effort has produced, used in conjunction with existing data banks, will permit additional applications of the law enforcement data base. These additional applications are discussed in Section 7.0.

TABLE 12. MAJOR ANTHROPOMETRIC SURVEY RESULTS.

Measurement	Means				
	1974 Law Enforce- ment Officers	1971 Army Aviators	1966 Army Soldiers	1954 Flying Personnel	1953 Basic Trainees
1. Weight	183.68 lb	171.1	159.1	163.6	147.4
2. Height	1781.2 mm	1745.6	1745.2	1755.4	1740.9
3. Functional Reach	829.7	878.6	826.0	821.2	—
4. Chest Breadth	346.4	344.0	305.7	305.6	291.0
5. Chest Circumference	1021.6	984.4	937.7	985.5	903.7
6. Waist Circumference	906.1	871.3	802.9	813.9	770.2
7. Waist Front	413.3	—	—	387.1	—
8. Head Circumference	574.9	563.2	561.1	570.7	563.0
9. Hand Circumference	214.3	—	216.1	—	214.9
10. Shoulder Height Sitting	615.2	—	623.8	590.7	—
11. Sitting Height	921.8	—	906.9	912.8	—
12. Knee Height Sitting	559.1	530.1	540.6	550.4	—
13. Buttock-knee Length	615.0	601.9	594.7	600.0	—
14. Shoulder Breadth	494.7	474.0	453.7	454.1	—
15. Hand Length	198.0	197.0	194.7	197.0	193.9
16. Head Breadth	154.7	152.7	152.7	154.0	151.1
17. Face Breadth	143.0	—	139.9	140.8	—
18. Face Length	121.3	113.3	120.3	—	—
19. Lip Length	51.5	51.6	—	51.5	—
20. Hand Length	193.5	192.0	190.3	190.2	191.5
21. Forefinger Length	126.2	114.3	—	—	—
22. Hand Breadth	89.9	88.5	89.0	88.3	87.4
23. Trigger Position	67.6	—	—	—	—

TABLE 12. (Continued).

Measurement	Standard Deviations				
	1974 Law Enforce- ment Officers	1971 Army Aviators	1966 Army Soldiers	1954 Flying Personnel	1953 Basic Trainees
1. Weight	26.35 lb	23.8	23.3	20.8	20.9
2. Height	57.8 mm	63.3	66.1	61.9	66.2
3. Functional Reach	42.0	41.8	48.5	41.4	—
4. Chest Breadth	26.3	23.9	21.5	20.4	23.0
5. Chest Circumference	79.0	68.7	66.9	62.2	60.7
6. Waist Circumference	94.6	86.1	81.8	76.8	69.3
7. Waist Front	26.9	—	—	28.4	—
8. Head Circumference	15.8	15.4	16.1	15.8	16.1
9. Hand Circumference	10.2	—	11.4	—	14.8
10. Shoulder Height Sitting	29.7	—	31.8	28.9	—
11. Sitting Height	34.9	—	36.6	32.7	—
12. Knee Height Sitting	22.0	25.7	27.3	25.1	—
13. Buttock-knee Length	27.1	26.3	28.5	27.0	—
14. Shoulder Breadth	29.4	25.6	25.4	23.0	—
15. Head Length	6.9	6.7	7.3	6.4	7.1
16. Head Breadth	5.7	5.4	5.9	5.1	5.9
17. Face Breadth	6.0	—	5.6	5.1	—
18. Face Length	6.4	6.7	6.6	—	—
19. Lip Length	4.4	3.6	—	3.5	—
20. Hand Length	9.1	8.7	9.6	8.6	9.6
21. Forefinger Length	7.6	7.8	—	—	—
22. Hand Breadth	4.2	4.2	4.9	4.1	4.5
23. Trigger Position	6.7	—	—	—	—

TABLE 13. RANKED RESULTS OF MAJOR ANTHROPOMETRIC SURVEYS.

a. STATISTICAL VALUES FOR HEIGHT
(Values in Inches)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	US Navy Pilots Age – N-1190	(1960)	70.24	0.07	2.36	0.05	3.36	60.0	78.5	18.5
2	Law Enforcement Officer Age 30.7 N-2989	(1975)	70.12	0.04	2.28	0.03	3.20	—	—	—
3	US Naval Aviators Age 29.6 N-1549	(1964)	69.94	0.06	2.33	0.04	3.33	63.5	77.2	13.7
4	US Air Force Age 30.0 N-2420	(1967)	69.82	0.05	2.44	0.04	3.49	62.2	77.6	15.4
5	US Army Aviators Age 22.0 N-1640	(1968)	69.70	0.06	2.40	0.04	3.44	61.5	77.0	15.5
6	ATC Trainees Age 27.9 N-678	(1961)	69.56	0.09	2.50	0.07	3.59	61.2	76.5	15.3
7	US Army Aviators Age 30.23 N-500	(1959)	69.50	0.10	2.25	0.07	3.24	62.7	76.0	13.3
8	US Air Force Age 27.9 N-4062	(1950)	69.11	0.04	2.44	0.03	3.53	59.4	77.6	18.2
9	US Civilian Men Age 25-34(30) N-675	(1960-62)	69.10	0.11	2.81	0.08	4.07	—	—	—
10	US Army Aviators Age 28.1 N-125	(1966)	69.05	0.21	2.29	0.15	3.32	61.3	74.3	13.0
11	US Navy Recruits Age 19.9 N-4095	(1966)	69.03	0.04	2.57	0.03	3.73	60.1	78.2	18.1
12	USAF Trainees Age 19.3 N-2632	(1965)	68.92	0.05	2.55	0.04	3.69	59.6	78.8	19.2
13	US Army Trainees Age 20.2 N-2639	(1966)	68.78	0.05	2.54	0.03	3.69	60.1	77.4	17.3
14	US Marine Corps Age 20.9 N-2008	(1966)	68.72	0.06	2.48	0.04	3.61	61.7	77.4	15.7
15	US Army Aviators Age 26.2 N-1482	(1970)	68.72	0.06	2.49	0.05	3.63	59.9	77.7	17.8
16	US Army Age 22.2 N-6682	(1966)	68.71	0.03	2.60	0.02	3.79	59.7	78.6	18.9
17	US Civilian Men Age 18-24(21) N-411	(1960-62)	68.70	0.13	2.73	0.10	3.97	—	—	—
18	US Army Armored Age 27.0 N-489	(1966)	68.68	0.12	2.60	0.08	3.79	61.7	75.9	14.2
19	US Army Infantry Age 22.8 N-3429	(1966)	68.64	0.05	2.61	0.03	3.81	61.0	76.4	15.4
20	USAF Trainees Age 18.9 N-3331	(1952)	69.54	0.05	2.61	0.03	3.81	61.0	76.4	15.4
21	US Army DRAGON Age 23.3 N-254	(1967)	68.51	0.17	2.65	0.12	3.86	61.8	76.0	14.2
22	US Army Age 24.3 N-24508	(1946)	68.47	0.02	2.52	0.01	3.68	59.1	78.7	19.6
23	US Civilian Men Age 18-79(44) N-3091	(1960-62)	68.20	0.05	2.85	0.04	4.18	—	—	—

TABLE 13. (Continued).

b. STATISTICAL VALUES FOR WEIGHT
(Values in Pounds)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	Law Enforcement Officer Age 30.7 N-2991	(1975)	183.68	0.48	26.34	0.34	14.30	—	—	—
2	US Air Force Age 30.0 N-2420	(1967)	173.60	0.44	21.44	0.31	12.35	118	264	146
3	US Naval Aviators Age 29.6 N-1549	(1964)	171.40	0.48	19.09	0.34	11.14	110	245	135
4	US Army Aviators Age 26.2 N-1482	(1970)	171.15	0.62	23.84	0.44	13.93	104	281	177
5	US Civilian Men Age 25-34(30) N-675	(1960-62)	169.00	1.08	28.12	0.77	16.64	—	—	—
6	US Navy Pilots Age — N-1190	(1960)	167.44	0.53	18.25	0.38	10.90	118	228	110
7	US Army Aviators Age 28.1 N-125	(1966)	166.18	1.84	20.54	1.30	12.36	112	216	104
8	US Civilian Men Age 18-79(44) N-3091	(1960-62)	166.00	0.50	27.73	0.35	16.70	—	—	—
9	US Army Aviators Age 30.25 N-500	(1959)	165.77	0.85	18.90	0.60	11.40	110	229	119
10	US Army Armored Age 27.0 N-489	(1966)	165.42	1.20	26.55	0.85	16.05	108	284	176
11	US Army Aviators Age 22.0 N-1640	(1968)	164.00	0.46	18.70	0.33	11.40	110	229	119
12	US Air Force Age 27.9 N-4052	(1950)	163.66	0.33	20.86	0.23	12.74	104	265	161
13	US Army DRAGON Age 23.3 N-254	(1967)	162.24	1.55	24.65	1.09	15.19	109	253	144
14	ATC Trainees Age 27.9 N-678	(1961)	161.81	0.85	22.09	0.60	13.65	105	239	134
15	US Army Infantry Age 22.8 N-3425	(1966)	160.34	0.39	22.81	0.28	14.22	100	272	172
16	US Marine Corps Age 20.9 N-2006	(1966)	160.16	0.44	19.67	0.31	12.28	110	248	138
17	US Army Age 22.2 N-6677	(1966)	159.10	0.29	23.35	0.20	14.68	100	284	184
18	US Civilian Men Age 18-24(21) N-411	(1960-62)	158.00	1.19	24.22	0.84	15.33	—	—	—
19	US Navy Recruits Age 19.9 N-4091	(1966)	157.75	0.36	23.28	0.26	14.76	104	272	168
20	US Army Trainees Age 20.2 N-2638	(1966)	155.97	0.45	23.09	0.32	14.81	100	256	156
21	US Army Age 24.3 N-24506	(1946)	154.81	0.13	20.56	0.09	13.28	95	305	210
22	USAF Trainees Age 19.3 N-2632	(1965)	151.42	0.44	22.48	0.31	14.84	94	238	144
23	USAF Trainees Age 18.9 N-3332	(1952)	147.44	0.36	20.97	0.26	14.22	100	295	195

TABLE 13. (Continued).

c. STATISTICAL VALUES FOR CHEST CIRCUMFERENCE
(Values in Inches)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	Law Enforcement Officer Age 30.7 N-2990	(1975)	40.22	0.06	3.11	0.04	7.70	—	—	—
2	US Civilian Men Age 18-79(44) N-3091	(1960-62)	39.20	0.06	3.10	0.04	7.91	—	—	—
3	US Civilian Men Age 25-34(30) N-675	(1960-62)	39.10	0.12	3.20	0.09	8.18	—	—	—
4	US Naval Aviators Age 29.6 N-1549	(1964)	38.92	0.06	2.27	0.04	5.85	30.8	47.9	17.1
5	US Air Force Age 27.9 N-4057	(1950)	38.80	0.04	2.45	0.03	6.31	31.1	49.6	18.5
6	US Air Force Age 30.0 N-2420	(1967)	38.80	0.05	2.50	0.04	6.44	30.4	48.1	17.7
7	US Army Aviators Age 26.2 N-1482	(1970)	38.75	0.07	2.71	0.05	6.98	31.4	53.2	21.8
8	US Army Aviators Age 28.1 N-125	(1966)	38.52	0.21	2.32	0.15	6.02	32.4	45.4	13.0
9	ATC Trainees Age 27.9 N-681	(1961)	39.17	0.10	2.56	0.07	6.70	32.0	48.0	16.0
10	US Army Armored Age 27.0 N-489	(1966)	37.93	0.13	2.92	0.09	7.70	31.2	48.9	17.7
11	US Civilian Men Age 18-24(21) N-411	(1960-62)	37.80	0.15	3.00	0.10	7.94	—	—	—
12	US Army Aviators Age 30.25 N-500	(1959)	37.72	0.09	2.07	0.07	5.49	32.3	43.2	10.9
13	US Navy Pilots Age — N-1190	(1960)	37.59	0.06	2.19	0.05	5.83	29.2	46.8	17.6
14	US Marine Corps Age 20.9 N-2008	(1966)	37.11	0.05	2.30	0.04	6.19	31.6	49.3	17.7
15	US Army Infantry Age 22.8 N-3429	(1966)	37.01	0.04	2.60	0.03	7.03	30.0	48.9	18.9
16	US Army Age 22.2 N-6682	(1966)	36.92	0.03	2.63	0.02	7.14	28.2	48.9	20.7
17	US Navy Recruits Age 19.9 N-4095	(1966)	36.63	0.04	2.62	0.03	7.14	29.2	46.9	17.7
18	US Army Trainees Age 20.2 N-2639	(1966)	36.53	0.05	2.54	0.04	6.97	28.2	48.3	20.1
19	US Army Age 24.3 N-24470	(1946)	36.38	0.01	2.34	0.01	6.43	28.0	48.4	20.4
20	USAF Trainees Age 19.3 N-2632	(1965)	36.14	0.05	2.57	0.04	7.12	27.5	49.9	22.4
21	USAF Trainees Age 18.9 N-3330	(1952)	35.58	0.04	2.39	0.03	6.71	29.1	47.6	18.5

TABLE 13. (Continued).

d. STATISTICAL VALUES FOR WAIST CIRCUMFERENCE
(Values in Inches)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	Law Enforcement Officer Age 30.7 N-2988	(1975)	35.67	0.07	3.72	0.05	10.40	—	—	—
2	US Civilian Men Age 18-79(44) N-3091	(1960-62)	35.00	0.08	4.40	0.06	12.57	—	—	—
3	US Air Force Age 30.0 N-2420	(1967)	34.49	0.06	2.91	0.04	8.43	26.7	49.1	22.4
4	US Army Aviators Age 26.2 N-1482	(1970)	34.30	0.09	3.39	0.06	9.89	25.9	47.7	21.8
5	US Civilian Men Age 25-34(30) N-675	(1960-62)	34.10	0.16	4.20	0.11	12.32	—	—	—
6	US Naval Aviators Age 29.6 N-1549	(1964)	33.61	0.07	2.58	0.05	7.69	23.3	44.0	20.7
7	US Army Aviators Age 28.1 N-125	(1966)	33.30	0.26	2.96	0.19	8.88	26.1	40.8	14.7
8	US Army Armored Age 27.0 N-489	(1966)	32.73	0.17	3.80	0.12	11.60	25.5	50.3	24.8
9	US Army Aviators Age 30.25 N-500	(1959)	32.70	0.11	2.49	0.08	7.61	26.0	40.1	14.1
10	ATC Trainees Age 27.9 N-681	(1961)	32.41	0.11	2.97	0.08	9.15	25.0	45.0	20.0
11	US Navy Pilots Age — N-1190	(1960)	32.37	0.07	2.48	0.05	7.66	26.0	42.0	16.0
12	US Air Force Age 27.9 N-4059	(1950)	32.04	0.05	3.02	0.04	9.44	24.4	47.2	22.8
13	US Civilian Men Age 18-24(21) N-411	(1960-62)	31.90	0.19	3.80	0.13	11.91	—	—	—
14	US Army Infantry Age 22.8 N-3429	(1966)	31.62	0.05	3.12	0.04	9.88	23.8	48.0	24.2
15	US Army Age 22.2 N-6682	(1966)	31.61	0.04	3.22	0.03	10.19	23.1	50.3	27.2
16	US Navy Recruits Age 19.9 N-4095	(1966)	31.59	0.05	3.21	0.04	10.15	23.9	44.6	20.7
17	US Army Trainees Age 20.2 N-2639	(1966)	31.33	0.06	3.18	0.04	10.15	23.1	46.2	23.1
18	US Marine Corps Age 20.9 N-2008	(1966)	31.22	0.06	2.49	0.04	7.99	24.9	45.8	21.3
19	USAF Trainees Age 19.3 N-2632	(1965)	30.68	0.06	2.94	0.04	9.58	24.5	45.8	21.3
20	US Army Age 24.3 N-24472	(1946)	30.60	0.02	2.76	0.01	9.02	23.2	46.8	23.6
21	USAF Trainees Age 18.9 N-3325	(1952)	30.32	0.05	2.73	0.03	8.99	23.2	46.9	23.7

TABLE 13. (Continued).

e. STATISTICAL VALUES FOR SITTING HEIGHT
(Values in Inches)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	US Air Force Age 30.0 N-2420	(1967)	36.69	0.03	1.25	0.02	3.41	31.8	41.4	9.6
2	Law Enforcement Officer Age 30.7 N-2984	(1975)	36.29	0.02	1.36	0.02	3.70	—	—	—
3	US Naval Aviators Age 29.6 N-1549	(1964)	36.28	0.03	1.25	0.02	3.43	32.2	41.6	9.4
4	ATC Trainees Age 27.9 N-681	(1961)	36.20	0.05	1.29	0.04	3.55	33.0	40.0	7.0
5	US Army Aviators Age 22.0 N-1640	(1968)	36.20	0.02	1.30	0.02	3.59	31.9	40.5	8.6
6	US Navy Recruits Age 19.9 N-4095	(1966)	36.06	0.02	1.35	0.01	3.74	31.2	41.0	9.8
7	US Army Aviators Age 28.1 N-125	(1966)	36.02	0.12	1.34	0.08	3.73	31.6	39.1	7.5
8	US Navy Pilots Age — N-1190	(1960)	36.02	0.04	1.45	0.03	4.03	31.2	41.0	9.8
9	US Civilian Men Age 25-34(30) N-675	(1960-62)	36.00	0.05	1.41	0.04	3.92	—	—	—
10	US Air Force Age 27.9 N-4061	(1950)	35.94	0.02	1.29	0.02	3.58	29.9	40.2	10.3
11	US Army Trainees Age 20.2 N-2639	(1966)	35.91	0.03	1.35	0.02	3.77	31.2	40.6	9.4
12	USAF Trainees Age 19.3 N-2631	(1965)	35.87	0.03	1.37	0.02	3.81	31.0	40.4	9.4
13	US Marine Corps Age 20.9 N-2008	(1966)	35.82	0.03	1.39	0.02	3.88	31.6	39.8	8.2
14	US Army Aviators Age 26.2 N-1482	(1970)	35.80	0.03	1.27	0.02	3.56	31.0	40.1	9.1
15	US Civilian Men Age 18-24(21) N-411	(1960-62)	35.80	0.07	1.48	0.05	4.13	—	—	—
16	US Army Age 24.3 N-24352	(1946)	35.78	0.01	1.34	0.01	3.74	30.3	41.3	11.0
17	US Army Age 22.2 N-6682	(1966)	35.70	0.02	1.44	0.01	4.04	30.4	40.6	10.2
18	US Army Aviators Age 30.25 N-500	(1959)	35.61	0.06	1.27	0.04	3.57	31.5	40.1	8.6
19	US Civilian Men Age 18-79(44) N-3091	(1960-62)	35.60	0.03	1.48	0.02	4.16	—	—	—
20	US Army DRAGON Age 23.3 N-254	(1967)	35.57	0.09	1.41	0.06	3.97	31.8	39.6	7.8
21	US Army Infantry Age 22.8 N-3429	(1966)	35.56	0.03	1.48	0.02	4.15	30.4	40.6	10.2
22	US Army Armored Age 27.0 N-489	(1966)	35.51	0.07	1.55	0.05	4.36	31.2	40.2	9.0

TABLE 13. (Continued).

f. STATISTICAL VALUES FOR SHOULDER BREADTH
(Values in Inches)

Rank	Series		Mean	SE(M)	SD	SE(SD)	V(%)	Min	Range Max	Total
1	Law Enforcement Officer Age 30.7 N-2985	(1975)	19.48	0.02	1.16	0.01	5.90	—	—	—
2	US Air Force Age 30.0 N-2420	(1967)	18.99	0.02	1.01	0.01	5.31	15.6	22.3	6.7
3	US Naval Aviators Age 29.6 N-2549	(1964)	18.78	0.02	0.91	0.02	4.83	14.8	21.7	6.9
4	US Army Aviators Age 26.2 N-1482	(1970)	18.66	0.03	1.01	0.02	5.39	15.6	23.1	7.5
5	US Army Aviators Age 22.0 N-1640	(1968)	18.50	0.02	0.90	0.01	4.86	15.4	21.7	6.3
6	ATC Trainees Age 27.9 N-681	(1961)	18.44	0.04	1.15	0.03	6.23	13.5	22.5	9.0
7	US Army Aviators Age 28.1 N-125	(1966)	18.35	0.07	0.82	0.05	4.49	16.4	20.4	4.0
8	US Army Aviators Age 30.25 N-500	(1959)	18.27	0.04	0.88	0.03	4.82	15.0	22.0	7.0
9	US Army Armored Age 27.0 N-489	(1966)	18.16	0.05	1.08	0.03	5.96	15.3	21.9	6.6
10	USAF Trainees Age 19.3 N-2632	(1965)	18.02	0.02	0.98	0.01	5.42	15.0	21.4	6.4
11	US Army Age 24.3 N-24461	(1946)	17.95	0.01	0.99	0.00	5.52	13.8	23.2	9.4
12	US Marine Corps Age 20.9 N-2008	(1966)	17.91	0.02	0.91	0.01	5.09	15.4	22.8	7.4
13	US Army Infantry Age 22.8 N-3429	(1966)	17.89	0.02	1.00	0.01	5.58	14.7	23.1	8.4
14	US Air Force Age 27.9 N-4057	(1950)	17.88	0.02	0.91	0.01	5.06	14.6	22.8	8.2
15	US Army Age 22.2 N-6682	(1966)	17.86	0.01	1.00	0.01	5.59	14.3	23.1	8.8
16	US Army Trainees Age 20.2 N-2639	(1966)	17.75	0.02	0.97	0.01	5.48	14.3	21.4	7.1
17	US Navy Recruits Age 19.9 N-4095	(1966)	17.69	0.02	1.01	0.01	5.72	14.6	21.5	6.9

7.0 ADDITIONAL APPLICATIONS OF THE LAW ENFORCEMENT OFFICER ANTHROPOMETRIC DATA BASE

The law enforcement officer anthropometric data base developed by this study may be used directly for the improved design and sizing of body gear and protective equipment. It may also be used to provide matched samples for departments and agencies not measured by this survey, and it may be used to generate anticipated values for dimensions other than the 23 critical body measurements taken in this study.

7.1 MATCHED SAMPLES

Individuals who are similar in terms of the key factors of height, weight, and age are likely to be similar in other body dimensions. By knowing the composition of a given agency, in terms of these key factors, it will be possible to obtain a matched sample from the data base of the 2,993 officers who were actually measured. From this matched sample, a reasonably representative depiction of the physical characteristics of the unmeasured agency could be generated.

The ability to use matched samples ensures the continued utility of the developed data base. Different types of law enforcement agencies will be able to obtain reasonably accurate estimates of the physical dimensions of their men, regardless of their present or future composition in terms of variations in entrance requirements or ethnic distributions.

In addition, the comparisons made between estimated and actual measurements of height and weight (discussed in Section 5.2) and the findings of the short-form survey when compared with the body measurement survey in terms of these key factors (discussed in Section 5.3) indicate that agencies which wish to obtain a matched sample from the data bank may do so by using self-reporting techniques or existing recorded data, provided that necessary safeguards and correction factors are employed. The implication is that with a minimum expenditure of time or effort, an unmeasured department or agency may obtain a representative match for their own personnel by drawing from the data bank developed by this study.

7.2 ESTIMATES OF ADDITIONAL DIMENSIONS

The anthropometric data collected by this study may be used to obtain, from the data bank of the Aerospace Medical Research Laboratory (AMRL), estimates of additional measurements not measured in this body measurement survey. Access to the AMRL data bank is useful because it contains as many as 187 different body dimensions for some of the more than 65,000 persons who have been measured in other studies. (Data from this study have been provided to the Aerospace Medical Research Laboratory and to the US Army Natick Laboratory.) By making use of this data bank, it would be possible to extrapolate beyond the 23 body dimensions which were actually recorded from law enforcement officers and to generate predicted values for additional body dimensions which were unmeasured in this survey.

The estimates for dimensions not measured by this survey may be derived by matching the law enforcement sample with samples already in the data bank in terms of the key factors of height, weight, and age. Even more accurate estimates of particular dimensions may be made by obtaining a sample from the AMRL data bank matched in terms of the

most closely correlated dimensions for which measurements were actually taken, eg, estimating other dimensions of the hand by matching on the basis of hand circumference, hand length, and finger length.

Although the 23 dimensions actually measured in this survey are those which are most likely to be useful for sizing special body gear and protective equipment, access to additional, estimated dimensions might prove useful for the design and sizing of future developments in these areas. The development of the law enforcement officer anthropometric data base by this study should facilitate the generation of accurate estimates for additional, unmeasured, body dimensions.

8.0 ACKNOWLEDGEMENTS

This anthropometric study involved the cooperation of personnel from numerous law enforcement agencies throughout the United States. These agencies are identified in this section and are thanked for their full and productive participation.

The study also involved the close teamwork of Naval Electronics Laboratory Center (NELC) personnel assisted by personnel from other organizations. Those individuals who contributed substantially to the anthropometric survey are identified in this section and are also thanked for their dedication to the project.

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LAW ENFORCEMENT AGENCIES PARTICIPATING IN THE BODY MEASUREMENT SURVEY BY REGION

The following agencies permitted and encouraged participation by their officers in the body measurement survey. The 2,993 officers from these agencies who participated are thanked for their contribution to the development of the data base for this study.

SAN DIEGO, CALIFORNIA

San Diego Police Department

Central Division

Northern Division

Southern Division

San Diego City Police Academy

Coronado Police Department

National City Police Department

El Cajon Police Department

Chula Vista Police Department

La Mesa Police Department

San Diego County Sheriff's Department

Lemon Grove Division

El Cajon Division

Vista Division

LOS ANGELES, CALIFORNIA

Los Angeles Police Academy

California Highway Patrol

South Los Angeles (Gardena) Division

West Los Angeles (Culver City) Division

TUCSON/PHOENIX, ARIZONA

Pima County Sheriff's Department
Scottsdale Police Department
Tempe Police Department
Glendale Police Department
Maricopa County Sheriff's Department
 Glendale Division
 Mesa Division
Maricopa County Jail

DALLAS, TEXAS

Dallas Police Department
 South East Substation
 Northern Substation
Fort Worth Police Department
Dallas County Sheriff's Department
Federal Corrections Institution (Seagoville)

HOUSTON, TEXAS

Houston Police Academy
Harris County Sheriff's Department
Harris County Sheriff's Academy
Galveston Police Department
Galveston County Sheriff's Department
Texas State Prison at Rosharon

NEW ORLEANS, LOUISIANA

New Orleans Police Academy
Kenner Police Department
Jefferson Parish Sheriff's Department
Louisiana State Police

MIAMI, FLORIDA

Miami Metropolitan Police Department
Miami Metropolitan Police Academy
Fort Lauderdale Police Department
Miami Beach Police Department
Dade County Sheriff's Department

ATLANTA, GEORGIA

Atlanta Police Department
 Zone 3
 Zone 4
 Zone 5
Atlanta Police Academy
United States Penitentiary, Atlanta
Decatur Police Department
Decatur Sheriff's Department
DeKalb County Sheriff's Department

WASHINGTON, DC

- District of Columbia Metropolitan Police Department
 - First District
 - Second District
- District of Columbia Metropolitan Police Academy
- Prince Georges County Police
- Executive Protective Services
- United States Park Police
- Maryland State Police Academy

NEW YORK CITY, NEW YORK

- New York City Police Department
 - Midtown North Substation
 - Midtown South Substation
- New York City Police Academy

DETROIT, MICHIGAN

- Detroit Police Department
- Detroit Police Academy
- Dearborne Police Department
- Wayne County Sheriff's Department

MINNEAPOLIS/ST. PAUL, MINNESOTA

- Minneapolis Police Department
 - Downtown
 - Model Cities Precinct
- St. Paul Police Department
- Robbinsdale Police Department
- Golden Valley Police Department
- Bloomington Police Department
- Roseville Police Department
- Maplewood Police Department
- Ramsey County Sheriff's Department
- Hennepin County Sheriff's Department

KANSAS CITY, MISSOURI/KANSAS CITY, KANSAS

- Kansas City Police Department, Missouri
 - Central Division
 - Northeastern Division
 - Southern Division
- Regional Training Academy
- Kansas City Police Department, Kansas
- United States Penitentiary, Leavenworth, Kansas

DENVER, COLORADO

- Denver Police Department
 - Academy
 - Third District
- Denver County Sheriff's Department

DENVER (Continued)

Denver County Jail
Jefferson County Sheriff's Department
Colorado State Highway Patrol (Golden)

HELENA/BUTTE/MISSOULA, MONTANA

Deer Lodge State Penitentiary
Butte City Police Department
Silverbow County Sheriff's Department
Lewis and Clark County Sheriff's Department
Helena Police Department
Montana State Highway Patrol (Helena)
Missoula Police Department

SPOKANE, WASHINGTON

Spokane Police Department
Spokane County Sheriff's Department

PORTLAND, OREGON

Multnomah County Sheriff's Department
Vancouver Police Department
Clark County Sheriff's Department
Beaverton City Police Department
Oregon State Police Department
 Beaverton Division
 Multnomah Division
 Milwaukie Division

LAW ENFORCEMENT AGENCIES PARTICIPATING
IN THE SHORT-FORM SURVEY

The following agencies are especially thanked for providing height, weight, and age data on most of the men in their entire organizations or on most of the men at one or more substations of their organizations:

Police Department, Washington, DC
Police Department, Columbus, Ohio
Police Department, St. Louis, Missouri
Police Department, Kansas City, Missouri
Police Department, Seattle, Washington
Police Academy, Los Angeles, California
Sheriff's Department, Spokane, Washington
United States Penitentiary, Leavenworth, Kansas

The following agencies provided height, weight, and age data on up to 200 men in their organizations:

Police Department, Boston, Massachusetts
Police Department, Manchester, New Hampshire
Police Department, Hartford, Connecticut
Police Department, Newark, New Jersey
Police Department, New York City, New York
Police Department, Buffalo, New York
Police Department, Pittsburgh, Pennsylvania
Police Department, Philadelphia, Pennsylvania
Police Department, Washington, DC
Police Academy, Washington, DC
Police Department, Richmond, Virginia
Police Department, Charleston, West Virginia
Police Department, Charlotte, North Carolina
Police Department, Columbia, South Carolina
Police Department, Savannah, Georgia
Police Department, Jacksonville, Florida
Police Department, Miami, Florida
Police Department, Miami Beach, Florida
Police Department, Fort Lauderdale, Florida
Sheriff's Department, Dade County, Florida
Police Department, Birmingham, Alabama
Police Department, Mobile, Alabama
Police Department, Lexington, Kentucky
Police Department, Columbus, Ohio
Police Department, Cleveland, Ohio
Police Department, Lansing, Michigan
Police Department, Des Moines, Iowa
Police Department, Cedar Rapids, Iowa
Police Department, St. Paul, Minnesota
Police Department, Minneapolis, Minnesota
Sheriff's Department, Hennepin County, Minnesota
Police Department, Bloomington, Minnesota
Police Department, Duluth, Minnesota
Police Department, Sioux Falls, South Dakota
Police Department, Rapid City, South Dakota

Police Department, Billings, Montana
Police Department, Helena, Montana
State Penitentiary, Deer Lodge, Montana
Police Department, Butte, Montana
Police Department, Missoula, Montana
Police Department, Oak Park, Illinois
Police Department, Springfield, Illinois
Police Department, St. Louis, Missouri
Police Department, Kansas City, Missouri
Police Department, St. Joseph, Missouri
Police Department, Topeka, Kansas
United States Penitentiary, Leavenworth, Kansas
Police Department, Wichita, Kansas
Police Department, Omaha, Nebraska
Police Department, Lincoln, Nebraska
Police Department, Little Rock, Arkansas
Police Department, Oklahoma City, Oklahoma
Police Department, Tulsa, Oklahoma
Police Academy, Houston, Texas
Sheriff's Department, Harris County, Texas
Sheriff's Academy, Harris County, Texas
Police Department, Galveston, Texas
Sheriff's Department, Galveston County, Texas
State Correctional Facility, Rosharon, Texas
Police Department, Lubbock, Texas
Police Department, Flagstaff, Arizona
Police Department, Albuquerque, New Mexico
Police Department, Las Cruces, New Mexico
Police Department, Reno, Nevada
Police Academy, Los Angeles, California
Police Department, Riverside, California
Police Department, San Jose, California
Police Department, Portland, Oregon
State Police, Beaverton, Oregon
State Police, Multnomah, Oregon
State Police, Mikwaukie, Oregon
Police Department, Spokane, Washington
Sheriff's Department, Spokane, Washington
Police Department, Vancouver, Washington

APPENDIX A: SURVEY PROCEDURES

APPENDIX A: SURVEY PROCEDURES

This appendix contains detailed information about the procedures employed in conducting both the body measurement survey and the short-form survey of height, weight, and age. It is divided into two parts corresponding to these separate survey efforts.

These sections explain how the study was organized and conducted and indicate some of the problem areas encountered in this study.

An attempt has been made to eliminate as much repetition as possible, yet some repetition is necessary to permit this section to stand intact without undue need for reference to earlier sections.

A-1. BODY MEASUREMENT SURVEY

For the body measurement survey, 23 critical body dimensions were obtained from approximately 3,000 law enforcement officers from different regions, agencies, and ethnic backgrounds.

A1.1 PURPOSE. The purpose of obtaining these body measurements was to improve the sizing of protective equipment for law enforcement agencies. Discussions with designers and manufacturers of this equipment indicated that they presently had little data which reflected the measurements of the population for which they were producing equipment. In the relatively few cases in which scientifically obtained data were being used, the data were either from studies conducted during World War II or from populations which had not been matched to those of law enforcement agencies.

A1.2 CRITICAL BODY DIMENSIONS. From discussions with manufacturers of law enforcement protective equipment, a listing of potentially useful dimensions was compiled. Discussions with anthropometrists refined the list. A review of the literature, together with additional consultations with anthropometrists, led to the determination of 23 body measurements as being of the greatest potential use to improve sizing. These 23 dimensions are listed in figure A1 as they appeared on the survey form. An indication of the utility of each of these measurements is given in table I in the main text, and a precise definition of each of the measurements is presented in Section 3.1.

In deciding on the measurements which would be taken, an effort was made to employ the same terms of definition and the same procedures as those utilized by other anthropometrists in order that the data would be compatible with earlier studies.

Anthropometrists have traditionally obtained as much data as they could. Studies with as many as 187 separate measurements obtained on each subject are not unknown. Some of the knowledge gained by earlier studies has been applied in planning for this study with the result that it is possible to obtain fewer measurements without losing significant usefulness of the data. For example, by examining data from earlier studies in which many dimensions of the head and face were taken, physical anthropologists found that it was possible to predict most of the dimensions critical for adequate sealing of respirators on the basis of two measurements – face length and lip length. The face length was critical for the outer seal; the lip length, for the inner seal. In planning for this study, therefore, it was possible to decide to measure fewer dimensions and still be assured of the utility and sufficiency of the measurements.

11 DUP COL 1-8

weight	1	2	REGION: _____
height	3	4	NUMBER: _____
functional reach	5	6	CITY: _____
chest breadth	7	8	AGENCY: _____
chest circumference	9	10	MEASURER: _____
waist circumference	11	12	RECORDER: _____
waist front	13	14	
head circumference	15	16	
hand circumference	17	18	
shoulder height sitting	19	20	
sitting height	21	22	
knee height sitting	23	24	
buttock-knee length	25	26	
shoulder breadth	27	28	
head length	29	30	
head breadth	31	32	
face breadth	33	34	
face length	35	36	
lip length	37	38	
hand length	39	40	
forefinger length	41	42	
hand breadth	43	44	
trigger position	45	46	

PLEASE FILL OUT THIS PORTION OF THE FORM												
NAME:	11	12	13	14	15	16	17	18	19	20	21	22
	LAST								FIRST MIO			
BIRTHDATE:	23	24	25	26	27	28						
	month		day		year							
DATE SWORN:	29	30	31	32								
	month		year									

(PLEASE CHECK THE APPROPRIATE CATEGORY)				
RANK:	academy	(01)	captain	(09)
	patrolman 3rd	(02)	inspector	(10)
	patrolman 2nd	(03)	assistant chief	(11)
	patrolman 1st	(04)	deputy chief	(12)
	patrolman	(04)	chief	(13)
	corporal	(05)	marshal	(14)
	sergeant	(06)	deputy sheriff	(16)
	lieutenant	(07)	prison guard	*(17)
	major	(08)	other (specify)	(15)

OUTY:	patrol	(1)
	traffic (incl. accident, motorcycles, etc.)	(2)
	investigations (incl. forgery, homicide, public inspection, narcotics, surveillance, etc.)	(3)
	communications	(4)
	administration (incl. public affairs, records, etc.)	(5)
	other (specify)	(6)

PRIOR MILITARY SERVICE:	yes	no
	(1)	(2)

HANDEDNESS FOR WEAPON USAGE:	right	left	ambidextrous
	(1)	(2)	(3)

PREDOMINANT ETHNIC BACKGROUND:				
	Black	(01)	European, Northern (Danish, Swedish, Norwegian, etc.)	(11)
	Mexican-American	(02)	European, Eastern (Czech, Polish, Russian, etc.)	(12)
	Puerto-Rican	(03)	European, Southern (Spanish, Italian, Portuguese, Greek, etc.)	(13)
	Cuban	(04)	European, Western (British, German, French, Celtic, etc.)	(14)
	Hawaiian	(05)	Other (specify)	(15)
	Chinese	(06)		
	Japanese	(07)		
	Other Oriental	(08)		
	American Indian	(09)		
	East Indian	(10)		

Figure A-1. Body measurement survey form.

In other areas, however, such as defining arm or leg reach envelopes, or determining the necessary dimensions for rigid body armor, the minimum number of critical dimensions has not yet been determined.

In the case of rigid body armor, it was decided to take as many dimensions as would seem likely to be significant. The need for further measurements would probably not prove likely, or if it did, sufficient information would already have been gathered to permit a closely matched sample to be drawn from existing data banks to fill in the needed details.

In the case of the arm reach envelope, although no set of critical dimensions has been determined, it was decided that one measurement, that of functional reach, would be the single dimension which could be most easily converted into whatever dimensions are eventually decided upon as defining the envelope. Similar reasoning led to the adoption of buttock-knee length and knee height as being sufficient for determining leg reach envelopes.

A1.3 MEASUREMENT SURVEY FORM. The format of the survey form was designed to minimize recorder error and to facilitate the entry of the data onto cards for computer processing. Two computer cards contained the data recorded on each survey form.

The form, which is duplicated in figure A-1, was divided into three parts: the subject identifying data, the subject measurement data, and the subject demographic data. The subjects were asked to fill out the information requested within the heavy line separating the lower right portion from the rest of the form. The remainder of the form was filled out by the recorder.

Subject Identifying Data

Identifying data were recorded by the measurer or recorder at the top center of the sheet. The data recorded were the following:

REGION: The name of one of 17 major geographic regions.

NUMBER: Within each region, numbering of subjects began anew. Hence, the first five digits identified the individual by region and number.

CITY: The name of the city and/or law enforcement agency within the region was recorded.

AGENCY: The type of agency was indicated as being police (1), sheriff (2), highway patrol (3), prison guard (4), and state police (5). The nomenclature of the different agencies varied from region to region. The most confusion arose over sheriffs who functioned as prison guards and state police who functioned as highway patrol. Generally, the primary function determined the classification.

MEASURER: The name of the measurer was entered.

RECORDER: The name of the recorder was entered. (These last two entries were made in the initial part of the study in order to determine whether there were biases in favor of reporting or recording certain terminal digits. These data were recorded during the first part of the study but were eliminated during the later stages as the measuring teams became familiar with their biases and as the streamlining of the measuring procedure with split measuring stations and two measurers made such data analysis impossible.)

Subject Measurement Data

The 23 dimensions on which measurements were taken were listed on the left side of the survey form. The boxes into which the measurements were entered were on the far left and in the upper portion of the form. This design was adopted because it was

anticipated that the recorder would be working with the form on a clipboard and that, since most of the recorders were right-handed, they would need a flat surface on which to rest their hand while writing. The boxes began an inch below the top edge to permit the fastener to clip the sheet to the board. The squares for entering the data were made small on the advice of those experienced with recording anthropometric data who maintained that the small boxes would force neater and, hence, more legible, transcriptions.

The order in which the measurements appear on the form represents the order in which they were taken, that order having been determined by such factors as the subject's position (standing or sitting) and the instruments which needed to be used. By having similar measurements conducted sequentially, a minimum expenditure of time was required. (In Section A1.7, a more complete discussion is presented on the order of measuring employed.)

Subject Demographic Data

The subject was asked to record his name, birthdate, and the date he first joined a law enforcement agency as a sworn officer. Depending on the workload, a recorder would complete the remainder of this portion of the form, or the officer would complete it himself.

NAME: Last name up to 10 characters, first and middle initials.

BIRTHDATE: Date of birth, with month preceeding day.

DATE SWORN: Month and year of first joining a law enforcement agency as a sworn officer.

RANK: A choice of 17 ranks was provided. There is no uniform hierarchy of titles in the different law enforcement agencies. In some agencies, there are gradations of patrolmen which may or may not indicate duties or responsibilities other than time in service. In some, a first class patrolman was highest; in others, a third class was most advanced. Because of this confusion, recorders were instructed to score a patrolman of any level as (04) unless the designation indicated a trainee or recruit level position. In sheriff's departments, sergeants and advanced officers who could mark themselves as either a deputy sheriff or their actual rank were instructed to mark their rank.

DUTY: A choice of 6 duties was provided. Even with this number of options, it was found that at least two more categories should have been included: these additional categories would have been "prison guard" and "academy cadet".

PRIOR MILITARY SERVICE: The subject was asked whether or not he had been in the service or National Guard.

HANDEDNESS FOR WEAPON USAGE: The subject was asked with which hand he would prefer to fire a weapon in a combat situation. Many officers have had training to fire weapons using either hand. A response of ambidextrous was discouraged since the study was interested in determining preferences rather than abilities.

PREDOMINANT ETHNIC BACKGROUND: The subject was offered a listing of 15 categories. Answering this question caused the greatest amount of confusion, particularly among those who would be considered "Anglos" by convention. The uncertainty was usually remedied by asking: "From what part of Europe did most of your ancestors come?" Nevertheless, there were large numbers of respondents who indicated "Other," or replied "Don't Know," or "American." In encoding the responses, the recorder recorded a (16) for the responses of those who would be considered "white" Americans but who could not further specify their background.

During the design of the survey form, the keypunch operators who would be working with the forms were consulted in order to determine the best arrangement of the material for data entry.

The survey forms were printed in green ink on no-carbon-required (NCR) paper. The color of the print was chosen so that the ink pens most likely to be used in recording the data (black, red, or blue) would stand out clearly. The NCR duplication was employed in order to have separate copies immediately available for safekeeping. One set was kept with the measuring team, the other was mailed to the laboratory.

A1.4 MEASURING EQUIPMENT. In order to be able to conduct the measurement survey, several sets of precision measuring instruments were obtained and special equipment was designed. The entire apparatus is depicted in figure A-2 and a detailed view of the measuring instruments is presented in figure A-3. The use of these instruments for each measurement is discussed in Section 3.1.

Measuring Instruments

The measuring instruments consisted of the following commercially available items:

Physicians Scales	Continental (Health-o-Meter)
Anthropometers (0-2100 mm)	Siber-Hegner, No 101
Sliding Calipers (Martin Type) (0-200 mm)	Siber-Hegner, No 104
Spreading Calipers with rounded ends (0-300 mm)	Siber-Hegner, No 106
Steel Measuring Tape (0-2000 mm)	Siber-Hegner, No 110

The anthropometer, a portable one, could be disassembled into four sections. When the lower half was detached, the upper portion with the slide served as a beam caliper. Measuring tapes were also obtained from Lufkin. The Whyteface tapes were the easiest to read, but they did not stand up to the cleaning treatment very well. All tapes used had a tendency to jam after prolonged usage.

The anthropometric instruments were ordered from Siber Precision, Incorporated, in a large instrument bag configuration (No 113). This bag protects the instruments and is convenient to carry. It contains a large pocket which is convenient for carrying small accessory items such as body marking pencils and survey forms.

Trigger Device

Interviews with law enforcement officials and with the manufacturers of weapons used by these officials indicated the need for information about the location of the trigger relative to the heel of the weapon stock. No conventional anthropometric device existed which would supply that information. The closest approximation which could be obtained was the forefinger length (from the tip of the forefinger to the thumb crotch) which was measured by the sliding caliper.

In order to obtain the needed information, a special measuring instrument was designed. This device is depicted in figure A-3 and detailed specifications for it appear in Appendix D.



Figure A-2. Measuring apparatus.

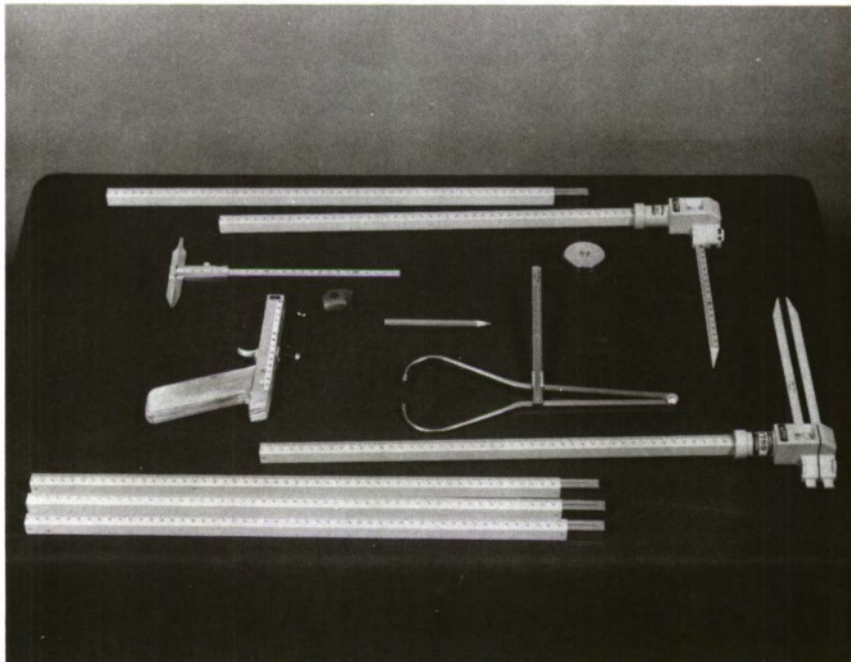


Figure A-3. Measuring instruments.

Additional Equipment

In addition to the above listed instruments and devices, it was necessary to carry additional equipment for the measurement survey. The additional equipment included such items as the following:

Body Marking Pencils (Red)	(for identifying body landmarks)
Tissue Paper and Alcohol	(for cleaning the instruments after each use)
Heating Pads	(for warming cold instruments)
Felt Cloth Sheets	(for draping over the wall and seat)
Towels	(for covers)
Survey Forms	(for recording data)
Information Sheets	(for explaining the purpose of the survey)
Extension Cords	(for supplying electricity to the heating pads)
Masking Tape	(for fastening sheets to the wall and seat)
Signs	(for indicating measuring stations)
Portable Tables	(for holding instruments)

Anthropometric Bench

Because the survey required the collecting of data in different agencies in different regions of the country, it was necessary that the measuring teams travel with all the items they would need, and that the equipment be portable. Seldom, during the course of the data collection effort, was it possible to set up the equipment at one location for over a full day; usually it was necessary to make and break the station several times, frequently at different locations. A container to carry all the equipment needed for the survey was wanted.

Because the facilities in which the measuring was conducted varied considerably, it was also necessary to provide a standard seat and an adjustable foot support in order to obtain consistent measurements from location to location.

The design of a portable anthropometric bench solved both problems. The bench, depicted in figure A-2, has complete specifications given for it in Appendix E. When assembled, the bench served as a standard seat with an adjustable foot rest. When disassembled, it served as a container for all the items listed above. The wheels on the base made it easy to move horizontally. Vertically, loaded, it was a different matter because when it was fully loaded, it weighed over 130 pounds. The portable anthropometric bench served its purpose well, protecting the instruments and materials in transit and serving as a necessary part of the measuring apparatus at the locations visited.

A1.5 TEAMS AND TRAINING. The body measurement information was collected by teams of Navy civilian and military personnel. The team personnel were human factors specialists with backgrounds in research psychology or human engineering. Training was provided by Webb Associates through an arrangement with the Aerospace Medical Research Laboratory.

The formal training course lasted a week. It consisted of introductory lectures on the field of anthropometry and on the purpose of the current survey, and was coupled with extensive laboratory training. The class broke into groups of three to practice identifying landmarks, using anthropometric instruments, and taking accurate measurements. A skeleton

was used to demonstrate the precise location of some of the skeletal landmarks. Following the week of supervised practice and another week of repeat sessions, team members obtained measurements of Navy recruits in order to become familiar with working with inexperienced subjects. The third week after training, the teams were in the field collecting data from members of the San Diego Police Department.

A1.6 SAMPLING PROCEDURE. In obtaining a sample of law enforcement officers for the body measurement survey, a prime objective was to collect data from different regions of the United States. Additional objectives included obtaining a sample of men from different types of agencies and from different ethnic backgrounds.

In fulfilling these objectives, body measurements were obtained in 17 regions of the contiguous United States. They were obtained from municipal and suburban police, sheriffs and county police, state police and highway patrols, and prison guards. An effort was also made to obtain samples representing different ages. Because the physical criteria for admission to law enforcement agencies are changing, a special effort was made to obtain measurements of recently appointed officers and recruits.

The 17 regions chosen were selected to assure that adequate samples from different areas of the country would be obtained, rather than to assure an equitable sampling on the basis of population. Another consideration in selecting regions was the likelihood of increasing the representation in the survey of those from minorities.

With regard to the representation given the different types of agencies, it was decided that officers from police departments should comprise 2,000 of those surveyed; from the sheriffs, 500; from the highway patrol and state police, 250; and from prison guards, 250. Samples of these sizes would be adequate to identify agency differences, yet ensure that the more numerous law enforcement agencies would be given better representation.

Once the regions had been determined, a preliminary schedule for collecting data was drafted. The schedule was based on a four-man team and planned for their going to one region for five working days and then proceeding directly to a second region for another five days. After returning, the entire team would be on other, locally based projects for two weeks before another expedition was scheduled. By rotating members on the teams, it would be possible for different team members to take turns so that a continuous measuring effort would be underway, but the burden of long absences from home would be avoided. In practice, scheduling delays and the demand on team personnel by other projects made a rigid assignment system impractical. Considerable flexibility in team composition and scheduling assignments was necessary.

For each region, a listing was prepared of the names of the major metropolitan areas and surrounding suburbs, and of the counties in which they were located. With a tentative schedule established, it was then possible to contact the heads of the major law enforcement agencies in the different regions, informing them of the survey and of the anticipated time that the measuring teams would be in their areas, and asking for a person to contact on the force. Samples of the information enclosed in these letters are included in figures A-4 and A-5.

When a response was received, letters and/or telephone calls established the most opportune time for the data collecting to take place. Such factors as weather conditions, vacation schedules, local events, graduations of academy classes, etc, affected the availability of officers. It was impossible to plan for all contingencies; we arrived at a state penitentiary the day after a prison break.

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY

SUMMARY

SPONSOR: This study is being conducted by the Naval Electronics Laboratory Center (NELC) of San Diego, a federal government research laboratory, for the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards (NBS) in Washington, D.C.

The study is funded by the National Institute of Law Enforcement and Criminal Justice (NILECJ), the Law Enforcement Assistance Administration (LEAA), and the Department of Justice.

OBJECTIVES: Collect body measurement information on 3,000 law enforcement officers, from 20 different regions of the United States.

Computer-process the collected information by region and type of agency. (No presentation of results will be made by individual officers or by individual departments.)

Make this information available to producers and suppliers of protective equipment for law enforcement officers. This will include those who work with the following types of equipment:

- Body Armor.
- Helmets.
- Face Masks and Respirators.
- Gloves.
- Weapon Stocks.
- Hand-Held or Body-Carried Support Systems.

RESULTS: Production of more effective and properly-sized protective equipment.

Increased availability of equipment needed by law enforcement agencies.

Improved equipment available to you, the law enforcement officer.

BACKGROUND: Manufacturers of law enforcement equipment need this information to be better able to size protective gear for officers. (Most equipment is presently designed or sized with little or no scientific basis, or on the basis of data collected during World War II.) Manufacturers have expressed the need for current information on the 23 specific body dimensions on which we are collecting data.

Suppliers of law enforcement equipment need this information to be able to stock adequate numbers of properly sized equipment for the different types of agencies in different regions of the country.

This needed information, obtained by the NELC/LESL body measurement survey teams, will be provided to manufacturers and suppliers of protective equipment by the Law Enforcement Standards Laboratory.

PROCEDURE: Fill out a short form with name, birthdate, etc.

NELC Teams trained by the Aerospace Medical Research Laboratory will take measurements of 23 vital body dimensions.

- Measurements are primarily of the torso, head, and hand.
- Measuring will be done while the law enforcement officer is in socks and shorts.

Total time is approximately 10 minutes.

Figure A-4. Information handout sheet given to each participating officer.

TO: ALL PERSONNEL

FROM: CHIEF OF POLICE

SUBJECT: BODY MEASUREMENTS OF LAW ENFORCEMENT OFFICERS

Effective Monday, December 17, 1973, a team of trained technicians from NELC working for the Law Enforcement Standards Laboratory will be located in the supervisors' locker room from 1200 hours until 1600 hours. Their purpose is to obtain body measurements from law enforcement officers. Similar measurements will be taken from law enforcement officers in other regions of the United States.

The object is to improve the officer's safety by determining and improving standards for size of equipment such as body armor, helmets, face masks, respirators, hand weapons, etc.

The measuring teams will be here for 3 to 5 days to obtain their samples from this region.

This is on a voluntary basis but we urge all of you to take the short amount of time necessary to assist with this worthwhile project.

Officers who volunteer to participate in the measuring will be asked to fill out a short demographic data form giving information such as date of birth, length of service, etc. Measurements will then be taken while the officer is in shorts. From start to finish, the whole process takes approximately 15 minutes.

Please read at Lineup and Post.

Figure A-5. Typical announcement bulletin

Once a firm commitment was obtained from the major agency of a region, other agencies were contacted. Tentative schedules were established when information was obtained from these agencies as to the number of people who might be measured, the times of shift changes, etc.

Throughout the data collection effort, great flexibility was required. When in a new region, while the measuring operations of the first day were underway, an assessment had to be made about the prospects for the remainder of the week at different departments.

It was difficult to determine in advance of the visit what the response would be at the different agencies visited. Generally, if the chief were strongly in favor of the project or if there were a strong research arm of the force, the response would be good.

Most of the measuring had to be done immediately before or after shift changes. Although, in a given city, different agencies might have different shift hours, there was seldom sufficient time difference between the shift changes to permit the measuring team to disassemble the equipment, travel to the new site, and resume measuring. The time between shift changes was spent collecting data at academies, prisons, special course schools, or at the departments at which scheduled measuring sessions were permitted. As a consequence, there were many days when the data would be recorded at as many as three or four sites at five different intervals.

The factors cited above have been presented in this section on sampling procedure because they are pertinent to the consideration of how the sample was obtained. The major concern was the availability of men and the time it took to get the measurements. With the variations in participation and the virtual impossibility of obtaining data from every officer of a given agency, even of every officer selected at random from a roster, it was not possible to achieve a truly random sample. The available sample was that which was measured. As far as the distribution of men from different regions, agencies, and ethnic backgrounds is concerned, the sampling achieved its intended results.

A1.7 MEASURING PROCEDURE. Although a four-man team was anticipated to compose the data collection force at most regions surveyed, three-man and two-man teams were occasionally used primarily because of the anticipated response and the level of effort which could be justified.

With the four-man team, two measuring stations were set up. An idealized representation of a measuring facility is depicted in figure A-6. In practice, it was seldom possible to have such amenable surroundings. Most of the measuring was conducted in locker rooms, classrooms, or meeting rooms. Frequently, the measuring was performed in offices or in bathrooms; once in a basement storeroom, once in a jail cell, and once in a morgue. The measuring needed to be performed in a place where the officers could disrobe to their shorts and socks. In order to identify some of the landmarks from which the measurements were to be taken, and in order to take the measurements, this disrobing was necessary. A location which afforded some privacy was required.

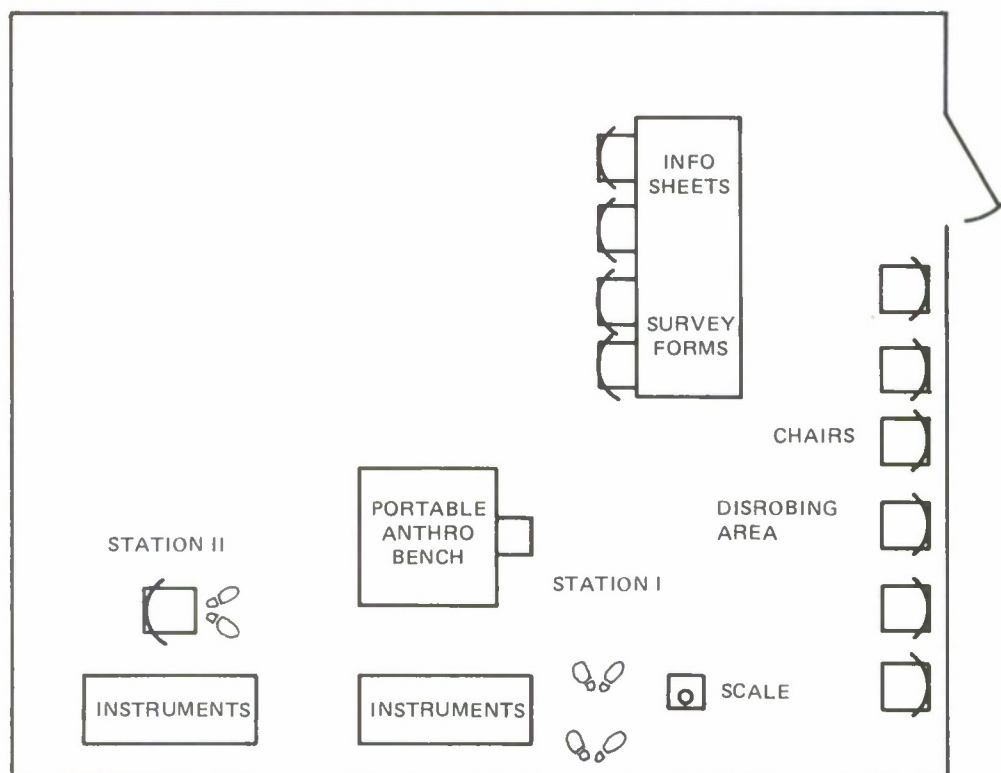


Figure A-6. Typical measuring facility.

With the four-man team, two measuring stations were established. At the first station, the measurements from weight to shoulder breadth were taken and at the second station the remainder of the form was completed.

In the idealized version, an officer would enter the room, fill out the demographic data on the survey form, disrobe to shorts and socks, proceed to the first station for the measurements from weight to shoulder breadth, then to the second at which the remainder of the form would be completed. The survey form would then be checked and stacked. With a smooth flow of officers, it was possible to have one at each measuring station, with one filling out the forms, while another disrobed. In practice, this happened all too infrequently.

When three men were operating, two stations would be used if the data were being obtained at an academy or other institute in which the flow of officers was relatively constant; if the flow was sporadic, a single station was used and the third man prepared the officers for the measuring sequence.

The order in which the measurements were arranged on the survey form is the order which was determined to be the most economical in terms of time and effort, both for the measurer and the subject. For example, all the measurements were taken in a standing position before the subject was seated; all the measurements were taken using the same measuring device before the measurer used a different measuring device. These aspects of the ordering of the measurements are indicated in table A-1.

During the data collection, one person would measure while the other would record. The roles were frequently reversed, usually on a morning versus afternoon basis.

In a week of measuring, a four-man team would collect, on the average, data on 200 men. The time required for measuring decreased from around fifteen minutes per man to less than eight. With a four-man team working in tandem, more than twenty men per hour could be processed. The problem was the difficulty in obtaining and moderating at a constant flow the input of men.

A1.8 DATA PREPARATION. After each day of data collecting, a designated team member scanned the collected survey forms, checking that all the identifying data had been completed, that the demographic data had been correctly entered, and that the measurement data looked reasonable and legible. When this procedure was completed, the duplicate sheet was separated from the first sheet and was stored until the end of the week. At that time, the duplicates were mailed to the laboratory for safekeeping while the originals stayed with the data collecting teams.

The completed data forms were submitted to laboratory personnel for keypunch entry. Because they had contributed to the design of the form prior to initiating the survey, they were familiar with the material. For each survey form, two data cards were punched. The first contained the Identifying Data and the Demographic Data; the second duplicated the first eight columns of the Identifying Data and contained all of the Measurement Data.

The punched data were routinely verified by the keypunch operators. After the information for a given region was entered on computer cards, it was duplicated, for safekeeping, and a listing was printed. The listing made it possible to spot and correct conspicuous errors.

A program which would identify measurements exceeding the mean by two standard deviations was developed. This program made it possible to check for some of the more flagrant errors in measuring, recording, and/or keypunching.

TABLE A-1. ORDER OF BODY MEASUREMENTS OBTAINED.

Order	Measurement	Subject Position	Instrument Used
1	Weight	Standing	Scales
2	Height	Standing	Anthropometer
3	Functional reach	Standing	Anthropometer
4	Chest breadth	Standing	Beam caliper
5	Chest circumference	Standing	Tape
6	Waist circumference	Standing	Tape
7	Waist front	Standing	Tape
8	Head circumference	Sitting	Tape
9	Hand circumference	Sitting	Tape
10	Shoulder height sitting	Sitting	Anthropometer
11	Sitting height	Sitting	Anthropometer
12	Knee height sitting	Sitting	Anthropometer
13	Buttock-knee length	Sitting	Beam caliper
14	Shoulder breadth	Sitting	Beam caliper
15	Head length	Sitting	Spreading caliper
16	Head breadth	Sitting	Spreading caliper
17	Face breadth	Sitting	Spreading caliper
18	Face length	Sitting	Sliding caliper
19	Lip length	Sitting	Sliding caliper
20	Hand length	Sitting	Sliding caliper
21	Forefinger length	Sitting	Sliding caliper
22	Hand breadth	Sitting	Sliding caliper
23	Trigger position	Sitting	Trigger device

By the time the computer listings were available, the data analysts were sufficiently familiar with the relationships between some of the measurements that they could spot a suspicious entry and were able to check its validity against related measurements. For example, for Caucasians, head breadth is approximately 0.75 the value of head length. If one listed measurement seemed unusual, the checker would examine the other to determine the likelihood of error. (A more sophisticated program which would accomplish the same objective was available, but it could not be run on the computer without extensive modification to the facilities available.)

If, on returning to the original survey form, an obvious error could be determined, for example, a 7 entered as a 1, or a 4 as a 9, the card would be corrected. If not, the values for the questionable measurement were set at zero and the entry was not counted in computing the statistics. The most frequent source of error was the misinterpretation of figures. Several times, however, it was found that either in the process of measuring or recording, data for two measurements had been switched.

These efforts to prepare the data for analysis have ensured the correction or removal of most errors affecting the most significant digits of the measurement (the decimeters or centimeters), but were unlikely to eliminate errors occurring at the millimeter level.

In a study of this magnitude, errors inevitably occur. The errors affecting the most significant digits were relatively rare, however. As a result of this data preparation and correction, the data submitted for analysis were essentially free of significant errors.

A1.9 DATA ANALYSIS. The data were analyzed by programs based on those designed and developed by the Aerospace Medical Research Laboratory and Webb Associates.

The analyses of the data on the detailed measurements of law enforcement officers has resulted in summary tables including, for each of the body dimensions measured, the following statistics:

Mean

Standard error of the mean

Standard deviation

Standard error of the standard deviation

Coefficient of variation

A measure of symmetry – veta I

A measure of kurtosis – veta II

The number of subjects

Ranges of scores, including:

Frequency

Cumulative frequency

Percent frequency

Cumulative percent frequency

Frequency histograms

Percentiles

Pertinent measurements appear in both metric and traditional English standard units.

Several analyses were also made of the demographic data and distribution curves for some specific body dimensions. Additional analyses are indicated by region, type of agency, and ethnic background.

The results of these analyses are presented in Section 3 and in Appendix B.

A-2. SHORT-FORM SURVEY

A second survey was undertaken to augment the data collected by the body measurement survey by greatly expanding the sample size in terms of the key parameters of height, weight, and age.

A2.1 PURPOSE. The information obtained by the height, weight, and age survey would permit the:

Determination of height, weight, and age characteristics for over 7,000 law enforcement officers.

Determination of how effectively the sample of the 3,000 represents the characteristics of a larger number of law enforcement officers.

Determination of how reliable self-reporting of the key body measurements by law enforcement personnel would be.

A2.2 SURVEY FORM. A short-form survey was designed to facilitate recording the age, height, and weight data from large numbers of law enforcement officers in different parts of the country. These forms were also designed with the intent of facilitating the work of the keypunch operators.

The form, which is duplicated in figure A-7, was divided into two parts. The subjects were asked to fill in the information requested on the left portion of the form. In the box on the right, identifying data were entered by the tabulator.

Subject Data

The subject was asked to record the following information:

NAME: Last name up to 10 characters, first and middle initials.

BIRTHDATE: Date of birth, with month preceding day.

ESTIMATED NUDE WEIGHT: Weight in pounds.

ESTIMATED NUDE HEIGHT: Height in feet and inches. Where respondents indicated fractions of inches, fractions of $1/2$ or below were rounded down to the nearest inch; fractions greater than $1/2$ were rounded up.

DATE: Date of completing the form.

As the study progressed and mass mailings were used to collect the short-form data, subjects were permitted to dispense with indicating their name and department. (This information had been requested in the earlier part of the study when efforts were made to correlate the subject's estimation of his height and weight with his actually recorded height and weight. Because during the mail sampling there was no attempt to compare the accuracy of the measurements, this information was dispensed with.)

A2.3 SAMPLING PROCEDURE/DATA GATHERING PROCEDURE. As was indicated earlier, there were several reasons for collecting data on the weight, height, and age survey. Because of the different objectives, different data collecting techniques were used.

In order to obtain an indication of how accurately officers could report their own height and weight, a limited sample of over 350 officers was asked to estimate their height and weight before being measured. The results of the comparison made between those measured and estimated dimensions are given in Section 5.2.

In order to obtain an indication of the characteristics of the populations of law enforcement officers throughout the United States, mailings consisting of a cover letter (fig A-8) and 200 forms were sent to police departments in major cities throughout the United States. The listing of major cities was selected from a list of Zip Code prefixes and included only the larger cities and cities for which the Zip Code Directory provided street listings. At least one city per state was addressed. A total of 86 letters was sent.

In addition, height, weight, and age data have been taken from the records at some academies and penitentiaries and from computer listings at a few departments. In these cases, it is unknown whether the figures obtained are self-reported or based on actual measurements.

A2.4 ANALYSIS. The same types of programs which had been used to generate the standard analysis measurements indicated in Section A1.9 were used to process the height, weight and age data.

The height, weight, and age survey data forms were examined and those which had evidently been filled out by separate individuals (and hence, presumably, were self-reported estimates) were processed separately from those which had been filled out by only one individual (and hence, presumably, were taken from a record which may have been based on either actual measurements or on estimates).

The results of the short-form survey are presented and discussed in detail in Section 4 of the main body of this report.



NAVAL ELECTRONICS LABORATORY CENTER

271 CATALINA BOULEVARD
SAN DIEGO, CALIFORNIA 92152
714-225-6011
AUTOVON 952-1011

IN REPLY REFER TO:

August 20, 1974

Dear Sir:

The Law Enforcement Standards Laboratory of the National Bureau of Standards is conducting a study for LEAA to improve the range of sizes of protective equipment available to law enforcement officers. We have been tasked to collect data on the body measurements of approximately 10,000 officers from different types of law enforcement agencies throughout this nation.

From your department, we would like to have information on height, weight, and age of as many officers as possible. If this information is available in a listing or table, we could use the information in that form. If no such listing is available for use by us, we would appreciate obtaining that information.

Enclosed are standard forms for collecting the pertinent information of height, weight, and age. It is not necessary, for our records, that the officers fill out the information on "Department" and "Name" (these were used in conjunction with another part of the study) but they will need to fill out the remaining categories of "Birthdate", "Estimated Nude Weight", "Estimated Nude Height", and "Date" of filling out the form.

The information collected in this study will be used to determine the range of sizes of officers in different types of agencies and regions and will complement a detailed body measurement survey which we have conducted on 3,000 officers.

The information you provide will have the effects of enabling the designers of protective equipment to determine the range of sizes needed, the manufacturers and producers of the equipment to decide on the numbers of items to produce in the various sizes, and the jobbers and suppliers to determine what quantity to stock in different regional outlets. Because the information will be pooled by agency and region, reports of individual departments will not be published.

Thank you for your assistance with this study. If you should need further, information, please contact us at 714-225-7372.

Sincerely,

James I. Martin, Ph.D.
Code 3400

Figure A-8. Letter requesting permission for short-form survey.

**APPENDIX B: BODY MEASUREMENT DATA —
DETAILED SUMMARY DATA BY
SAMPLE CATEGORIES AND SUBCATEGORIES**

APPENDIX B-1: EXPERIENCE

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

TOTAL SAMPLE
N=2993

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG		LB	
WEIGHT	2991	83.31	183.68	11.95	26.35	56.0	---	144.0	124.00 --- 318.00
		MM	IN	MM	IN	MM		IN	
HEIGHT	2989	1781.16	70.12	57.85	2.28	1559.0	---	2067.0	61.38 --- 81.84
FUNCTIONAL REACH	2987	829.70	32.67	42.00	1.65	705.0	---	1012.0	27.76 --- 39.8
CHEST BREADTH	2984	346.43	13.64	26.35	1.04	271.0	---	482.0	10.67 --- 18.98
CHEST CIRCUMFERENCE	2990	1021.56	40.22	79.00	3.11	781.0	---	1391.0	30.75 --- 54.76
WAIST CIRCUMFERENCE	2988	906.12	35.67	94.58	3.72	675.0	---	1378.0	26.57 --- 54.25
WAIST FRONT	2983	413.28	16.72	26.92	1.06	304.0	---	590.0	11.97 --- 23.23
HEAD CIRCUMFERENCE	2985	574.96	22.64	15.77	0.62	524.0	---	631.0	20.63 --- 24.84
HAND CIRCUMFERENCE	2985	214.27	8.44	10.21	0.40	180.0	---	278.0	7.09 --- 10.94
SHOULDER HEIGHT SITTING	2988	615.19	24.22	29.68	1.17	515.0	---	719.0	20.28 --- 28.31
SITTING HEIGHT	2984	921.80	36.29	34.46	1.36	789.0	---	1030.0	31.06 --- 40.55
KNEE HEIGHT SITTING	2984	559.15	22.01	25.26	0.99	468.0	---	653.0	18.43 --- 25.71
BUTTOCK KNEE LENGTH	2988	615.03	24.21	27.12	1.07	528.0	---	724.0	20.79 --- 28.50
SHOULDER BREADTH	2985	494.72	19.48	29.43	1.16	406.0	---	685.0	15.98 --- 26.97
HEAD LENGTH	2992	198.03	7.80	6.97	0.27	165.0	---	225.0	6.50 --- 8.86
HEAD BREADTH	2993	154.68	6.09	5.68	0.22	134.0	---	176.0	5.28 --- 6.93
FACE BREADTH	2993	143.02	5.63	6.04	0.24	120.0	---	167.0	4.72 --- 6.57
FACE LENGTH	2989	121.29	4.78	6.42	0.25	103.0	---	155.0	4.06 --- 6.10
LIP LENGTH	2992	51.51	2.03	4.38	0.17	37.0	---	68.0	1.46 --- 2.68
HAND LENGTH	2989	193.46	7.62	9.12	0.36	151.0	---	232.0	5.94 --- 9.13
FOREFINGER LENGTH	2987	126.23	4.97	7.62	0.30	105.0	---	154.0	4.13 --- 6.06
HAND BREADTH	2986	89.88	3.54	4.24	0.17	75.0	---	105.0	2.95 --- 4.13
TRIGGER POSITION	2867	67.65	2.66	6.73	0.26	52.0	---	91.0	2.05 --- 3.58

AGE DISTRIBUTION

		THE PERCENTILES	
MEAN VALUE	30.71	YEARS	
SE (MEAN)	0.16	59.66	99TH
SD DEVIATION	8.67	55.33	98TH
SE (SD DEV)	0.11	53.33	97TH
		49.50	95TH
****		44.53	90TH
		40.52	85TH
SYMMETRY---VETA I =	1.35	37.27	80TH
KURTOSIS---VETA II =	4.48	34.81	75TH
COEF. OF VARIATION =	28.2%	32.81	70TH
		31.42	65TH
		30.31	60TH
****		29.37	55TH
		28.52	50TH
NUMBER OF SUBJECTS =	2969	27.79	45TH
		27.20	40TH
		26.58	35TH
		25.94	30TH
		25.15	25TH
		24.41	20TH
		23.59	15TH
		22.70	10TH
		21.79	5TH
		21.32	3RD
		21.08	2ND
		20.46	1ST

LENGTH OF SERVICE

		THE PERCENTILES	
MEAN VALUE	4.82	YEARS	
SE (MEAN)	0.11	25.95	99TH
SD DEVIATION	5.86	23.95	98TH
SE (SD DEV)	0.08	21.28	97TH
		19.05	95TH
****		14.39	90TH
		10.88	85TH
SYMMETRY---VETA I =	1.93	7.99	80TH
KURTOSIS---VETA II =	6.33	6.55	75TH
COEF. OF VARIATION =	121.5%	5.54	70TH
		4.68	65TH
		3.93	60TH
****		3.24	55TH
		2.53	50TH
NUMBER OF SUBJECTS =	2969	1.97	45TH
		1.86	40TH
		1.76	35TH
		1.65	30TH
		1.54	25TH
		1.43	20TH
		1.32	15TH
		1.22	10TH
		1.11	5TH
		1.06	3RD
		1.04	2ND
		1.02	1ST

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

AGENCY

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	0	0.0
POLICE DEPARTMENT	2060	68.83
SHERIFF DEPARTMENT	521	17.41
HIGHWAY PATROL	134	4.48
PRISON/PENITENTIARY	236	7.89
STATE POLICE	42	1.40
OTHER	0	0.0

DUTY

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	24	0.80
PATROL	1199	40.06
TRAFFIC	139	4.64
INVESTIGATIONS	159	5.28
COMMUNICATIONS	21	0.70
ADMINISTRATION	157	5.25
OTHER	1295	43.27

RANK

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	3	0.10
ACADEMY	956	31.94
PATROLMAN 3	67	2.24
PATROLMAN 2	51	1.70
PATROLMAN 1	1088	36.35
CORPORAL	30	1.00
SERGEANT	170	5.68
LIEUTENANT	53	1.77
MAJOR	3	0.10
CAPTAIN	17	0.57
INSPECTOR	2	0.07
ASSIST CHIEF	1	0.03
DEPUTY CHIEF	2	0.07
CHIEF	6	0.20
MARSHAL	2	0.07
OTHER	80	2.67
DEPT SHERIFF	299	9.99
PRISON GUARD	163	5.45

PREDOMINANT ETHNIC BACKGROUND

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	45	1.50
BLACK	281	9.39
MEXICAN AMERICAN	98	3.27
PUERTO RICAN	16	0.53
CUBAN	11	0.37
HAWAIIAN	2	0.07
CHINESE	3	0.10
JAPANESE	3	0.10
OTHER ORIENTAL	4	0.13
AMERICAN INDIAN	42	1.40
EAST INDIAN	1	0.03
EUROPEAN, NORTH	241	8.05
EUROPEAN, EAST	141	4.71
EUROPEAN, SOUTH	205	6.85
EUROPEAN, WEST	1493	49.88
OTHER	93	3.11
WHITE AMERICAN	305	10.19
AMERICAN	5	0.17
CANADIAN	1	0.03
SOUTH AMERICAN	3	0.10

PRIOR MILITARY SERVICE

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	6	0.20
YES	1928	64.42
NO	1059	35.38

HANDEDNESS FOR WEAPON USAGE

TOTAL NUMBER = 2993

	NUMBER	PERCENT
LEFT BLANK	6	0.20
RIGHT	2656	88.74
LEFT	217	7.25
AMBIDEXTROUS	114	3.81

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

EXPERIENCED OFFICERS
N=2037

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	2036	85.23	187.90	12.32	27.15	56.0 -- 144.0	124.00 -- 318.00
		MM	IN	MM	IN	MM	IN
HEIGHT	2035	1785.06	70.28	58.49	2.30	1559.0 -- 2067.0	61.38 -- 81.38
FUNCTIONAL REACH	2034	833.04	32.80	41.60	1.64	705.0 -- 1012.0	27.76 -- 39.84
CHEST BREADTH	2030	350.50	13.80	26.83	1.06	273.0 -- 482.0	10.75 -- 18.98
CHEST CIRCUMFERENCE	2036	1037.20	40.83	79.99	3.15	806.0 -- 1391.0	31.73 -- 54.76
WAIST CIRCUMFERENCE	2034	926.97	36.49	95.51	3.76	679.0 -- 1378.0	26.73 -- 54.25
WAIST FRONT	2029	417.81	16.45	27.75	1.09	304.0 -- 590.0	11.97 -- 23.23
HEAD CIRCUMFERENCE	2034	576.87	22.71	15.59	0.61	529.0 -- 631.0	20.83 -- 24.84
HAND CIRCUMFERENCE	2033	215.71	8.49	10.15	0.40	182.0 -- 278.0	7.17 -- 10.94
SHOULDER HEIGHT SITTING	2032	617.99	24.33	30.04	1.18	517.0 -- 719.0	20.35 -- 28.31
SITTING HEIGHT	2030	925.14	36.42	34.96	1.38	789.0 -- 1030.0	31.06 -- 40.55
KNEE HEIGHT SITTING	2028	560.33	22.06	25.74	1.01	468.0 -- 653.0	18.43 -- 25.71
BUTTOCK KNEE LENGTH	2033	616.56	24.27	27.36	1.08	528.0 -- 724.0	20.79 -- 28.50
SHOULDER BREADTH	2032	498.90	19.64	29.62	1.17	408.0 -- 685.0	16.06 -- 26.97
HEAD LENGTH	2036	198.45	7.81	6.87	0.27	176.0 -- 225.0	6.93 -- 8.86
HEAD BREADTH	2037	155.36	6.12	5.66	0.22	139.0 -- 176.0	5.47 -- 6.93
FACE BREADTH	2037	143.99	5.67	5.93	0.23	120.0 -- 167.0	4.72 -- 6.57
FACE LENGTH	2033	121.71	4.79	6.47	0.25	103.0 -- 155.0	4.06 -- 6.10
LIP LENGTH	2036	52.26	2.06	4.30	0.17	37.0 -- 68.0	1.46 -- 2.68
HAND LENGTH	2033	193.67	7.62	9.10	0.36	151.0 -- 232.0	5.94 -- 9.13
FOREFINGER LENGTH	2033	126.67	4.99	7.66	0.30	106.0 -- 151.0	4.17 -- 5.94
HAND BREADTH	2033	90.22	3.55	4.19	0.17	78.0 -- 105.0	3.07 -- 4.13
TRIGGER POSITION	1946	67.46	2.66	6.89	0.27	52.0 -- 91.0	2.05 -- 3.58

AGE DISTRIBUTION

		THE PERCENTILES	
MEAN VALUE	33.35	YEARS	
SE (MEAN)	0.20	61.09	99TH
SD DEVIATION	9.06	57.51	98TH
SE (SD DEV)	0.14	55.21	97TH
		52.56	95TH
****		47.34	90TH
		44.33	85TH
SYMMETRY---VETA I =	1.06	41.52	80TH
KURTOSIS---VETA II =	3.54	38.89	75TH
COEF. OF VARIATION =	27.2%	36.88	70TH
		35.06	65TH
		33.41	60TH
****		32.13	55TH
		31.08	50TH
NUMBER OF SUBJECTS =	2022	30.07	45TH
		29.18	40TH
		28.42	35TH
		27.76	30TH
		27.19	25TH
		26.52	20TH
		25.69	15TH
		24.66	10TH
		23.45	5TH
		22.72	3RD
		22.23	2ND
		21.40	1ST

LENGTH OF SERVICE

		THE PERCENTILES	
MEAN VALUE	6.60	YEARS	
SE (MEAN)	0.14	26.80	99TH
SD DEVIATION	6.35	25.19	98TH
SE (SD DEV)	0.10	23.80	97TH
		20.68	95TH
****		17.36	90TH
		14.21	85TH
SYMMETRY---VETA I =	1.46	11.79	80TH
KURTOSIS---VETA II =	4.55	9.68	75TH
COEF. OF VARIATION =	96.2%	7.83	70TH
		6.80	65TH
		6.05	60TH
****		5.41	55TH
		4.82	50TH
NUMBER OF SUBJECTS =	2019	4.30	45TH
		3.81	40TH
		3.33	35TH
		2.85	30TH
		2.35	25TH
		1.93	20TH
		1.70	15TH
		1.47	10TH
		1.23	5TH
		1.14	3RD
		1.09	2ND
		1.05	1ST

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

AGENCY

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	0	0.0
POLICE DEPARTMENT	1303	63.97
SHERIFF DEPARTMENT	414	20.32
HIGHWAY PATROL	49	2.41
PRISON/PENITENTIARY	236	11.59
STATE POLICE	35	1.72
OTHER	0	0.0

DUTY

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	24	1.18
PATROL	1144	56.16
TRAFFIC	101	4.96
INVESTIGATIONS	157	7.71
COMMUNICATIONS	20	0.98
ADMINISTRATION	157	7.71
OTHER	434	21.31

RANK

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	3	0.15
ACADEMY	0	0.0
PATROLMAN 3	67	3.29
PATROLMAN 2	51	2.50
PATROLMAN 1	1088	53.41
CORPORAL	30	1.47
SERGEANT	170	8.35
LIEUTENANT	53	2.60
MAJOR	3	0.15
CAPTAIN	17	0.83
INSPECTOR	2	0.10
ASSIST CHIEF	1	0.05
DEPUTY CHIEF	2	0.10
CHIEF	6	0.29
MARSHAL	2	0.10
OTHER	80	3.93
DEPT SHERIFF	299	14.68
PRISON GUARD	163	8.00

PREDOMINANT ETHNIC BACKGROUND

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	40	1.96
BLACK	151	7.41
MEXICAN AMERICAN	64	3.14
PUERTO RICAN	3	0.15
CUBAN	4	0.20
HAWAIIAN	1	0.05
CHINESE	1	0.05
JAPANESE	0	0.0
OTHER ORIENTAL	4	0.20
AMERICAN INDIAN	32	1.57
EAST INDIAN	1	0.05
EUROPEAN, NORTH	193	9.47
EUROPEAN, EAST	79	3.88
EUROPEAN, SOUTH	80	3.93
EUROPEAN, WEST	1021	50.12
OTHER	72	3.53
WHITE AMERICAN	286	14.04
AMERICAN	2	0.10
CANADIAN	1	0.05
SOUTH AMERICAN	2	0.10

PRIOR MILITARY SERVICE

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	6	0.29
YES	1442	70.79
NO	589	28.92

HANDEDNESS FOR WEAPON USAGE

TOTAL NUMBER = 2037

	NUMBER	PERCENT
LEFT BLANK	5	0.25
RIGHT	1785	87.63
LEFT	151	7.41
AMBIDEXTROUS	96	4.71

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

RECRUITS
N=956

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG		LB	
WEIGHT	955	79.23	174.67	9.97	21.98	57.0	-- 124.0	126.00	-- 273.00
		MM	IN	MM	IN	MM		IN	
HEIGHT	954	1772.83	69.80	55.55	2.19	1597.0	-- 1964.0	62.87	-- 77.32
FUNCTIONAL REACH	953	822.55	32.38	41.96	1.65	705.0	-- 1002.0	27.76	-- 39.45
CHEST BREADTH	954	337.78	13.30	23.03	0.91	271.0	-- 419.0	10.67	-- 16.50
CHEST CIRCUMFERENCE	954	988.18	38.90	65.34	2.57	781.0	-- 1198.0	30.75	-- 47.17
WAIST CIRCUMFERENCE	954	861.64	33.92	75.24	2.96	675.0	-- 1152.0	26.57	-- 45.35
WAIST FRONT	954	403.65	15.89	22.16	0.87	340.0	-- 488.0	13.39	-- 19.21
HEAD CIRCUMFERENCE	951	570.88	22.48	15.38	0.61	524.0	-- 624.0	20.63	-- 24.57
HAND CIRCUMFERENCE	952	211.18	8.31	9.65	0.38	180.0	-- 243.0	7.09	-- 9.57
SHOULDER HEIGHT SITTING	956	609.24	23.99	27.98	1.10	515.0	-- 694.0	20.28	-- 27.32
SITTING HEIGHT	954	914.70	36.01	32.24	1.27	804.0	-- 1009.0	31.65	-- 39.72
KNEE HEIGHT SITTING	956	556.64	21.91	24.04	0.95	498.0	-- 638.0	19.61	-- 25.12
BUTTOCK KNEE LENGTH	955	611.76	24.08	26.32	1.04	544.0	-- 699.0	21.42	-- 27.52
SHOULDER BREADTH	953	485.79	19.13	26.91	1.06	406.0	-- 584.0	15.98	-- 22.99
HEAD LENGTH	956	197.14	7.76	7.10	0.28	165.0	-- 222.0	6.50	-- 8.74
HEAD BREADTH	956	153.22	6.03	5.44	0.21	134.0	-- 173.0	5.28	-- 6.81
FACE BREADTH	956	140.96	5.55	5.76	0.23	124.0	-- 158.0	4.88	-- 6.22
FACE LENGTH	956	120.40	4.74	6.21	0.24	103.0	-- 142.0	4.06	-- 5.59
LIP LENGTH	956	50.28	1.98	4.25	0.17	38.0	-- 68.0	1.50	-- 2.68
HAND LENGTH	956	193.02	7.60	9.17	0.36	164.0	-- 228.0	6.46	-- 8.98
FOREFINGER LENGTH	954	125.28	4.93	7.46	0.29	105.0	-- 154.0	4.13	-- 6.06
HAND BREADTH	953	89.16	3.51	4.24	0.17	75.0	-- 105.0	2.95	-- 4.13
TRIGGER POSITION	921	68.04	2.68	6.35	0.25	52.0	-- 89.0	2.05	-- 3.50

AGE DISTRIBUTION

	MEAN VALUE	25.09	THE PERCENTILES	
	SE (MEAN)	0.12	YEARS	
	SD DEVIATION	3.71	36.88	99TH
	SE (SD DEV)	0.09	35.01	98TH
			33.60	97TH
			31.99	95TH
****			30.45	90TH
			29.41	85TH
SYMMETRY---VETA I =	1.22		28.43	80TH
KURTOSIS---VETA II =	5.61		27.61	75TH
COEF. OF VARIATION =	14.8%		26.95	70TH
			26.47	65TH
			25.99	60TH
****			25.48	55TH
			24.97	50TH
NUMBER OF SUBJECTS =	947		24.50	45TH
			24.03	40TH
			23.55	35TH
			23.08	30TH
			22.70	25TH
			22.34	20TH
			21.98	15TH
			21.54	10TH
			21.11	5TH
			20.75	3RD
			20.43	2ND
			20.12	1ST

LENGTH OF SERVICE

	MEAN VALUE	1.04	THE PERCENTILES	
	SE (MEAN)	0.02	YEARS	
	SD DEVIATION	0.67	2.00	99TH
	SE (SD DEV)	0.02	1.99	98TH
			1.98	97TH
			1.96	95TH
****			1.91	90TH
			1.86	85TH
SYMMETRY---VETA I =	22.00		1.81	80TH
KURTOSIS---VETA II =	*****		1.76	75TH
COEF. OF VARIATION =	64.3%		1.71	70TH
			1.66	65TH
			1.61	60TH
****			1.55	55TH
			1.50	50TH
NUMBER OF SUBJECTS =	950		1.45	45TH
			1.40	40TH
			1.35	35TH
			1.30	30TH
			1.25	25TH
			1.20	20TH
			1.15	15TH
			1.10	10TH
			1.05	5TH
			1.03	3RD
			1.02	2ND
			1.01	1ST

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

AGENCY

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	0	0.0
POLICE DEPARTMENT	757	79.18
SHERIFF DEPARTMENT	107	11.19
HIGHWAY PATROL	85	8.89
PRISON/PENITENTIARY	0	0.0
STATE POLICE	7	0.73
OTHER	0	0.0

DUTY

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	0	0.0
PATROL	55	5.75
TRAFFIC	38	3.97
INVESTIGATIONS	1	0.10
COMMUNICATIONS	1	0.10
ADMINISTRATION	0	0.0
OTHER	861	90.06

RANK

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	0	0.0
ACADEMY	956	*****
PATROLMAN 3	0	0.0
PATROLMAN 2	0	0.0
PATROLMAN 1	0	0.0
CORPORAL	0	0.0
SERGEANT	0	0.0
LIEUTENANT	0	0.0
MAJOR	0	0.0
CAPTAIN	0	0.0
INSPECTOR	0	0.0
ASSIST CHIEF	0	0.0
DEPUTY CHIEF	0	0.0
CHIEF	0	0.0
MARSHAL	0	0.0
OTHER	0	0.0
DEPT SHERIFF	0	0.0
PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	5	0.52
BLACK	130	13.60
MEXICAN AMERICAN	34	3.56
PUERTO RICAN	13	1.36
CUBAN	7	0.73
HAWAIIAN	1	0.10
CHINESE	2	0.21
JAPANESE	3	0.31
OTHER ORIENTAL	0	0.0
AMERICAN INDIAN	10	1.05
EAST INDIAN	0	0.0
EUROPEAN, NORTH	48	5.02
EUROPEAN, EAST	62	6.49
EUROPEAN, SOUTH	125	13.08
EUROPEAN, WEST	472	49.37
OTHER	21	2.20
WHITE AMERICAN	19	1.99
AMERICAN	3	0.31
CANADIAN	0	0.0
SOUTH AMERICAN	1	0.10

PRIOR MILITARY SERVICE

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	0	0.0
YES	486	50.84
NO	470	49.16

HANDEDNESS FOR WEAPON USAGE

TOTAL NUMBER = 956

	NUMBER	PERCENT
LEFT BLANK	1	0.10
RIGHT	871	91.11
LEFT	66	6.90
AMBIDEXTROUS	18	1.88

APPENDIX B-2: AGENCIES

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

POLICE DEPARTMENT
N=2060

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	2059	92.67	182.25	11.29	24.90	56. -- 140.	124.00 -- 308.00
		MM	IN	MM	IN	MM	IN
HEIGHT	2058	1781.25	70.13	55.79	2.20	1597. -- 2067.	62.87 -- 81.38
FUNCTIONAL REACH	2057	828.20	32.61	41.87	1.65	705. -- 1002.	27.76 -- 39.45
CHEST BREADTH	2054	345.72	13.61	25.38	1.00	271. -- 482.	10.67 -- 18.98
CHEST CIRCUMFERENCE	2058	1016.92	40.04	74.67	2.94	790. -- 1391.	31.10 -- 54.76
WAIST CIRCUMFERENCE	2056	898.06	35.36	88.56	3.49	675. -- 1378.	26.57 -- 54.25
WAIST FRONT	2055	411.91	16.22	25.87	1.02	304. -- 533.	11.97 -- 20.98
HEAD CIRCUMFERENCE	2052	574.91	22.63	15.54	0.61	524. -- 631.	20.63 -- 24.84
HAND CIRCUMFERENCE	2053	213.74	8.41	10.12	0.40	182. -- 278.	7.17 -- 10.94
SHOULDER HEIGHT SITTING	2057	614.63	24.20	29.30	1.15	515. -- 716.	20.28 -- 28.19
SITTING HEIGHT	2052	922.64	36.32	33.87	1.33	789. -- 1030.	31.06 -- 40.55
KNEE HEIGHT SITTING	2053	560.01	22.05	24.43	0.96	489. -- 653.	19.25 -- 25.71
BUTTOCK KNEE LENGTH	2057	614.59	24.20	26.63	1.05	531. -- 724.	20.91 -- 28.50
SHOULDER BREADTH	2055	494.12	19.45	28.30	1.11	406. -- 639.	15.98 -- 25.16
HEAD LENGTH	2059	197.98	7.79	6.89	0.27	165. -- 224.	6.50 -- 8.82
HEAD BREADTH	2060	154.55	6.09	5.66	0.22	134. -- 176.	5.28 -- 6.93
FACE BREADTH	2060	142.67	5.62	5.99	0.24	124. -- 162.	4.88 -- 6.38
FACE LENGTH	2058	121.44	4.78	6.40	0.25	103. -- 155.	4.06 -- 6.10
LIP LENGTH	2060	51.39	2.02	4.33	0.17	37. -- 67.	1.46 -- 2.64
HAND LENGTH	2058	153.92	7.63	8.84	0.35	167. -- 232.	6.57 -- 9.13
FINGERTIP LENGTH	2055	126.51	4.98	7.50	0.30	105. -- 154.	4.13 -- 6.06
HAND BREADTH	2054	89.81	3.54	4.19	0.17	76. -- 105.	2.99 -- 4.13
TRIGGER POSITION	1938	67.79	2.67	6.79	0.27	52. -- 89.	2.05 -- 3.50

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	29.87	MEAN VALUE	4.90
SE(MEAN)	0.18	SE(MEAN)	0.13
SD DEVIATION	7.94	SD DEVIATION	5.99
SE(SD DEV)	0.12	SE(SD DEV)	0.09
****		****	
SYMMETRY---VF TA I = 1.42	35.56	SYMMETRY---VF TA I = 1.92	7.98
KURTOSIS---VF TA II = 4.91	33.27	KURTOSIS---VF TA II = 6.25	6.58
COEF. OF VARIATION = 26.6%	31.74	COEF. OF VARIATION = 122.2%	5.61
	30.61		4.77
	29.68		4.00
	28.87		3.31
	28.04		2.56
NUMBER OF SUBJECTS = 2045	27.45	NUMBER OF SUBJECTS = 2046	1.97
	26.86		1.86
****	26.28	****	1.75
	25.63		1.64
	24.91		1.54
	24.16		1.43
	23.34		1.32
	22.56		1.21
	21.73		1.11
	21.26		1.06
	21.02		1.04
	20.34		1.02

AGENCY		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	2060	****
2:SHERIFF DEPARTMENT	0	0.0
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
0:LEFT BLANK	22	1.07
1:PATROL	941	45.68
2:TRAFFIC	75	3.64
3:INVESTIGATIONS	110	5.34
4:COMMUNICATIONS	9	0.44
5:ADMINISTRATION	92	4.47
6:OTHER	811	39.37

RANK		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
0:LEFT BLANK	1	0.05
1:ACADEMY	757	36.75
2:PATROLMAN 3	57	2.77
3:PATROLMAN 2	47	2.28
4:PATROLMAN 1	84	4.77
5:CORPORAL	18	0.87
6:SERGEANT	106	5.15
7:LIEUTENANT	34	1.65
8:MAJOR	1	0.05
9:CAPTAIN	11	0.53
10:INSPECTOR	2	0.10
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	1	0.05
13:CHIEF	5	0.24
14:MARSHAL	1	0.05
15:OTHER	32	1.55
16:DEPT SHERIFF	3	0.15
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
0:LEFT BLANK	37	1.80
1:BLACK	218	10.58
2:MEXICAN AMERICAN	65	3.16
3:PUERTO RICAN	15	0.73
4:CUHAN	8	0.39
5:HAWAIIAN	2	0.10
6:CHINESE	2	0.10
7:JAPANESE	3	0.15
8:OTHER ORIENTAL	2	0.10
9:AMERICAN INDIAN	21	1.02
10:EAST INDIAN	1	0.05
11:EUROPEAN, NORTH	151	7.33
12:EUROPEAN, EAST	113	5.49
13:EUROPEAN, SOUTH	172	8.35
14:EUROPEAN, WEST	915	44.42
15:OTHER	72	3.50
16:WHITE AMERICAN	255	12.38
17:AMERICAN	4	0.19
18:CANADIAN	1	0.05
19:SOUTH AMERICAN	3	0.15

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
LEFT BLANK	3	0.15
YES	1304	63.30
NO	753	36.55

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 2060		
	NUMBER	PER CENT
LEFT BLANK	4	0.19
RIGHT	1835	89.08
LEFT	151	7.33
AMBIDEXTROUS	70	3.40

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

SHERIFF
N=521

	NUMBER	MEAN		SO DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	520	85.35	188.16	13.93	30.72	56. -- 144.	124.00 -- 318.00
		MM	IN	MM	IN	MM	IN
HEIGHT	519	1781.18	70.13	63.60	2.50	1644. -- 2022.	64.72 -- 79.61
FUNCTIONAL REACH	519	832.33	32.77	43.24	1.70	732. -- 974.	28.82 -- 38.35
CHEST BREADTH	519	348.26	13.71	30.23	1.19	283. -- 471.	11.14 -- 18.54
CHEST CIRCUMFERENCE	520	1033.72	40.70	90.68	3.57	781. -- 1366.	30.75 -- 53.78
WAIST CIRCUMFERENCE	520	926.98	36.50	106.76	4.20	679. -- 1332.	26.73 -- 52.44
WAIST FRONT	520	415.81	16.37	28.59	1.13	341. -- 521.	13.43 -- 20.51
HEAD CIRCUMFERENCE	521	575.84	22.67	16.25	0.64	528. -- 624.	20.79 -- 24.57
HAND CIRCUMFERENCE	521	215.03	8.47	10.55	0.42	180. -- 250.	7.09 -- 9.84
SHOULDER HEIGHT SITTING	520	613.89	24.17	30.75	1.21	520. -- 719.	20.47 -- 28.31
SITTING HEIGHT	520	917.69	36.13	36.84	1.45	795. -- 1028.	31.30 -- 40.47
KNEE HEIGHT SITTING	519	557.60	21.95	27.08	1.07	485. -- 636.	19.09 -- 25.04
BUTTOCK KNEE LENGTH	519	616.69	24.28	28.90	1.14	533. -- 718.	20.98 -- 28.27
SHOULDER BREADTH	519	498.68	19.63	33.27	1.31	415. -- 685.	16.34 -- 26.97
HEAD LENGTH	521	198.36	7.81	6.71	0.26	179. -- 218.	7.05 -- 8.58
HEAD BREADTH	521	154.58	6.09	5.63	0.22	140. -- 175.	5.51 -- 6.89
FACE BREADTH	521	143.66	5.66	6.08	0.24	125. -- 167.	4.92 -- 6.57
FACE LENGTH	520	121.00	4.76	6.45	0.25	103. -- 148.	4.06 -- 5.83
LIP LENGTH	521	51.36	2.02	4.25	0.17	41. -- 67.	1.61 -- 2.64
HAND LENGTH	519	192.37	7.57	9.37	0.37	166. -- 219.	6.54 -- 8.62
FOREFINGER LENGTH	520	125.74	4.95	7.65	0.30	106. -- 150.	4.17 -- 5.91
HAND BREADTH	521	89.82	3.54	4.45	0.18	75. -- 105.	2.95 -- 4.13
TRIGGER POSITION	519	67.73	2.67	6.66	0.26	52. -- 91.	2.05 -- 3.58

AGE OISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	30.54	YEARS		MEAN VALUE	3.70	YEARS	
SE(MEAN)	0.36	61.44	99TH	SE(MEAN)	0.19	23.43	99TH
SO DEVIATION	8.25	55.74	98TH	SD DEVIATION	4.38	18.35	98TH
SE(SO DEVI)	0.26	52.81	97TH	SE(SO DEVI)	0.14	16.52	97TH
****		48.47	95TH	****		13.08	95TH
		42.39	90TH			9.97	90TH
		38.58	85TH			7.70	85TH
SYMMETRY---VETA I = 1.60		36.37	80TH	SYMMETRY---VETA I = 2.37		6.16	80TH
KURTOSIS---VETA II = 5.76		34.28	75TH	KURTOSIS---VETA II = 9.41		5.24	75TH
COEF. OF VARIATION = 27.0%		32.47	70TH	COEF. OF VARIATION = 118.4%		4.49	70TH
		31.25	65TH			3.79	65TH
		30.20	60TH			3.15	60TH
****		29.23	55TH	****		2.58	55TH
		28.55	50TH			2.03	50TH
NUMBER OF SUBJECTS = 513		27.96	45TH	NUMBER OF SUBJECTS = 515		1.91	45TH
		27.42	40TH			1.80	40TH
****		26.87	35TH	****		1.70	35TH
		26.24	30TH			1.60	30TH
		25.42	25TH			1.50	25TH
		24.67	20TH			1.40	20TH
		24.09	15TH			1.30	15TH
		23.20	10TH			1.20	10TH
		22.15	5TH			1.10	5TH
		21.65	3RD			1.06	3RD
		21.38	2ND			1.04	2ND
		21.11	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	0	0.0
2:SHERIFF DEPARTMENT	521	****
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
0:LEFT BLANK	2	0.38
1:PATROL	192	36.85
2:TRAFFIC	9	1.73
3:INVESTIGATIONS	44	8.45
4:COMMUNICATIONS	7	1.34
5:ADMINISTRATION	28	5.37
6:OTHER	239	45.87

RANK		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
0:LEFT BLANK	2	0.38
1:ACADEMY	107	20.54
2:PATROLMAN 3	8	1.54
3:PATROLMAN 2	1	0.19
4:PATROLMAN 1	54	10.36
5:CORPORAL	9	1.73
6:SERGEANT	43	8.25
7:LIEUTENANT	8	1.54
8:MAJOR	0	0.0
9:CAPTAIN	2	0.38
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	1	0.19
12:DEPUTY CHIEF	1	0.19
13:CHIEF	1	0.19
14:MARSHAL	1	0.19
15:OTHER	9	1.73
16:DEPT SHERIFF	270	51.82
17:PRISON GUARD	4	0.77

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
0:LEFT BLANK	6	1.15
1:BLACK	37	7.10
2:MEXICAN AMERICAN	15	2.88
3:PUERTO RICAN	0	0.0
4:CUBAN	2	0.38
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	13	2.50
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	52	9.98
12:EUROPEAN, EAST	20	3.84
13:EUROPEAN, SOUTH	26	4.99
14:EUROPEAN, WEST	308	59.12
15:OTHER	9	1.73
16:WHITE AMERICAN	32	6.14
17:AMERICAN	1	0.19
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
LEFT BLANK	2	0.38
YES	331	63.53
NO	188	36.08

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 521		
	NUMBER	PER CENT
LEFT BLANK	2	0.38
RIGHT	461	88.48
LEFT	36	6.91
AMBIDEXTROUS	22	4.22

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

HIGHWAY PATROL
N=176

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	176	83.34	183.73	10.63	23.43	63. -- 125.	138.00 -- 275.00
<hr/>							
		MM	IN	MM	IN	MM	IN
HEIGHT	176	1794.51	70.65	51.50	2.03	1651. -- 1944.	65.00 -- 76.54
FUNCTIONAL REACH	176	831.47	32.74	37.57	1.48	733. -- 968.	28.86 -- 38.11
CHEST BREADTH	176	345.41	13.60	24.27	0.96	286. -- 419.	11.26 -- 16.50
CHEST CIRCUMFERENCE	176	1015.26	39.97	71.22	2.80	868. -- 1224.	34.17 -- 48.19
WAIST CIRCUMFERENCE	176	888.09	34.96	85.64	3.37	696. -- 1130.	27.40 -- 44.49
WAIST FRONT	176	409.95	16.14	23.57	0.92	358. -- 491.	14.09 -- 19.33
HEAD CIRCUMFERENCE	176	574.35	22.61	15.35	0.60	532. -- 627.	20.94 -- 24.68
HAND CIRCUMFERENCE	176	215.40	8.48	10.09	0.40	188. -- 243.	7.40 -- 9.57
SHOULDER HEIGHT SITTING	176	621.45	24.47	30.08	1.18	525. -- 717.	20.67 -- 28.23
SITTING HEIGHT	176	926.76	36.49	31.65	1.25	835. -- 1003.	32.87 -- 39.49
KNEE HEIGHT SITTING	176	563.09	22.17	23.63	0.93	499. -- 638.	19.65 -- 25.12
BUTTOCK KNEE LENGTH	176	616.86	24.29	25.24	0.99	561. -- 700.	22.09 -- 27.56
SHOULDER BREADTH	176	491.78	19.36	27.51	1.08	417. -- 563.	16.42 -- 22.17
HEAD LENGTH	176	198.83	7.83	7.33	0.29	180. -- 220.	7.09 -- 8.66
HEAD BREADTH	176	154.86	6.10	5.70	0.22	142. -- 172.	5.59 -- 6.77
FACE BREADTH	176	143.15	5.64	5.99	0.24	127. -- 156.	5.00 -- 6.14
FACE LENGTH	176	120.46	4.74	6.81	0.27	105. -- 149.	4.13 -- 5.87
LIP LENGTH	176	51.38	2.02	4.50	0.18	41. -- 68.	1.61 -- 2.68
HAND LENGTH	176	192.86	7.59	9.65	0.38	164. -- 228.	6.46 -- 8.98
FOREFINGER LENGTH	176	125.76	4.95	7.94	0.31	107. -- 151.	4.21 -- 5.94
HAND BREADTH	176	90.45	3.56	4.05	0.16	80. -- 102.	3.15 -- 4.02
TRIGGER POSITION	176	66.57	2.62	5.78	0.23	52. -- 86.	2.05 -- 3.39

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	29.23	MEAN VALUE	4.34
SE(MEAN)	0.53	SE(MEAN)	0.46
SD DEVIATION	7.07	SD DEVIATION	6.07
SE(SD DEV)	0.38	SE(SD DEV)	0.32
****		****	
SYMMETRY---VETA I = 1.35		SYMMETRY---VETA I = 2.18	
KURTOSIS---VETA II = 4.44		KURTOSIS---VETA II = 7.39	
COEF. OF VARIATION = 24.2%		COEF. OF VARIATION = 140.1%	
****		****	
NUMBER OF SUBJECTS = 175		NUMBER OF SUBJECTS = 176	
****		****	
	YEARS		YEARS
	54.13 99TH		27.62 99TH
	50.75 98TH		26.48 98TH
	49.75 97TH		21.91 97TH
	44.63 95TH		18.20 95TH
	37.92 90TH		13.90 90TH
	36.19 85TH		10.20 85TH
	34.56 80TH		7.35 80TH
	33.46 75TH		6.14 75TH
	32.08 70TH		4.55 70TH
	40.78 65TH		2.65 65TH
	29.80 60TH		2.00 60TH
	28.60 55TH		1.91 55TH
	27.90 50TH		1.83 50TH
	27.32 45TH		1.75 45TH
	26.69 40TH		1.66 40TH
	26.02 35TH		1.58 35TH
	25.39 30TH		1.50 30TH
	24.70 25TH		1.42 25TH
	23.92 20TH		1.33 20TH
	23.19 15TH		1.25 15TH
	22.07 10TH		1.17 10TH
	21.48 5TH		1.08 5TH
	21.27 3RD		1.05 3RD
	21.16 2ND		1.03 2ND
	21.05 1ST		1.02 1ST

<u>AGENCY</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	0	0.0
2: SHERIFF DEPARTMENT	0	0.0
3: HIGHWAY PATROL	134	76.14
4: PRISON/PEN.	0	0.0
5: STATE POLICE	42	23.86
6: OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	63	35.80
2: TRAFFIC	55	31.25
3: INVESTIGATIONS	4	2.27
4: COMMUNICATIONS	2	1.14
5: ADMINISTRATION	4	3.41
6: OTHER	46	26.14

<u>RANK</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	92	52.27
2: PATROLMAN 3	1	0.57
3: PATROLMAN 2	2	1.14
4: PATROLMAN 1	50	28.41
5: CORPORAL	2	1.14
6: SERGEANT	7	3.98
7: LIEUTENANT	3	1.70
8: MAJOR	0	0.0
9: CAPTAIN	1	0.57
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	18	10.23
16: DEPT SHERIFF	0	0.0
17: PRISON GUARD	0	0.0

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
0: LEFT BLANK	2	1.14
1: BLACK	10	5.68
2: MEXICAN AMERICAN	1	0.57
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	1	0.57
9: AMERICAN INDIAN	3	1.70
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	16	9.09
12: EUROPEAN, EAST	5	2.84
13: EUROPEAN, SOUTH	4	2.27
14: EUROPEAN, WEST	125	71.02
15: OTHER	5	2.84
16: WHITE AMERICAN	4	2.27
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	115	65.34
NO	61	34.66

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 176		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	152	86.36
LEFT	13	7.39
AMBIDEXTROUS	11	6.25

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

PRISON/PENITENTIARY

N=236

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	236	84.43	186.14	13.10	28.88	57. -- 133.	125.00 -- 294.00
		MM	IN	MM	IN	MM	IN
HEIGHT	236	1770.33	69.70	64.19	2.53	1559. -- 1982.	61.38 -- 78.03
FUNCTIONAL REACH	235	835.63	32.90	42.67	1.68	705. -- 1012.	27.76 -- 39.84
CHEST BREAOTH	235	349.34	13.75	26.60	1.05	283. -- 435.	11.14 -- 17.13
CHEST CIRCUMFERENCE	236	1039.94	40.94	87.51	3.45	836. -- 1361.	32.91 -- 53.58
WAIST CIRCUMFERENCE	236	943.73	37.15	105.65	4.16	692. -- 1340.	27.24 -- 52.76
WAIST FRONT	232	422.35	16.63	31.94	1.26	351. -- 590.	13.82 -- 23.23
HEAD CIRCUMFERENCE	236	573.98	22.60	16.87	0.66	529. -- 630.	20.83 -- 24.80
HAND CIRCUMFERENCE	235	216.40	8.52	9.92	0.39	187. -- 240.	7.36 -- 9.45
SHOULDER HEIGHT SITTING	235	617.84	24.32	29.56	1.16	543. -- 702.	21.38 -- 27.64
SITTING HEIGHT	236	919.85	36.21	35.23	1.39	830. -- 1025.	32.68 -- 40.35
KNEE HEIGHT SITTING	236	552.15	21.74	27.86	1.10	468. -- 650.	18.43 -- 25.59
BUTTOCK KNEE LENGTH	236	613.75	24.16	28.43	1.12	528. -- 693.	20.79 -- 27.28
SHOULDER BREAOTH	236	493.34	19.42	30.59	1.20	428. -- 644.	16.85 -- 25.35
HEAD LENGTH	236	197.18	7.76	7.80	0.31	177. -- 225.	6.97 -- 8.86
HEAD BREAOTH	236	155.86	6.14	5.75	0.23	141. -- 171.	5.55 -- 6.73
FACE BREAOTH	236	144.58	5.69	6.09	0.24	120. -- 163.	4.72 -- 6.42
FACE LENGTH	235	121.30	4.78	6.16	0.24	105. -- 136.	4.13 -- 5.35
LIP LENGTH	235	52.95	2.08	4.76	0.19	40. -- 66.	1.57 -- 2.60
HAND LENGTH	236	192.30	7.57	10.21	0.40	151. -- 232.	5.94 -- 9.13
FOREFINGER LENGTH	236	125.11	4.93	8.19	0.32	106. -- 151.	4.17 -- 5.94
HAND BREAOTH	235	90.25	3.55	4.22	0.17	79. -- 101.	3.11 -- 3.98
TRIGGER POSITION	234	67.12	2.64	6.91	0.27	52. -- 91.	2.05 -- 3.58

AGE DISTRIBUTION	
MEAN VALUE	39.46
SE(MEAN)	0.74
SD DEVIATION	11.40
SE(SD DEV)	0.52

SYMMETRY---VETA I =	0.09
KURTOSIS---VETA II =	2.00
COEFF. OF VARIATION =	28.9%

NUMBER OF SUBJECTS = 236

THE PERCENTILES

YEARS	
62.32	99TH
61.66	98TH
61.18	97TH
59.20	95TH
54.90	90TH
53.36	85TH
51.30	80TH
48.00	75TH
46.28	70TH
45.26	65TH
43.96	60TH
42.63	55TH
40.71	50TH
38.90	45TH
36.90	40TH
32.87	35TH
31.69	30TH
29.80	25TH
27.92	20TH
26.63	15TH
24.44	10TH
22.90	5TH
21.27	3RD
20.68	2ND
20.09	1ST

LENGTH OF SERVICE

MEAN VALUE	6.99
SE(MEAN)	0.44
SD DEVIATION	6.70
SE(SD DEV)	0.31

SYMMETRY---VETA I =	1.07
KURTOSIS---VETA II =	3.11
COEFF. OF VARIATION =	95.8%

NUMBER OF SUBJECTS = 232

THE PERCENTILES

YEARS	
26.68	99TH
24.18	98TH
22.35	97TH
20.77	95TH
18.80	90TH
15.73	85TH
13.43	80TH
12.10	75TH
10.49	70TH
8.16	65TH
6.47	60TH
4.98	55TH
4.48	50TH
3.98	45TH
3.51	40TH
3.05	35TH
2.45	30TH
1.95	25TH
1.76	20TH
1.57	15TH
1.38	10TH
1.19	5TH
1.11	3RD
1.03	2ND
1.04	1ST

AGENCY		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	0	0.0
2:SHERIFF DEPARTMENT	0	0.0
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	236	****
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	3	1.27
2:TRAFFIC	0	0.0
3:INVESTIGATIONS	0	0.0
4:COMMUNICATIONS	3	1.27
5:ADMINISTRATION	31	13.14
6:OTHER	199	84.32

RANK		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	0	0.0
2:PATROLMAN 3	1	0.42
3:PATROLMAN 2	1	0.42
4:PATROLMAN 1	0	0.0
5:CORPORAL	1	0.42
6:SERGEANT	14	5.93
7:LIEUTENANT	8	3.39
8:MAJOR	2	0.85
9:CAPTAIN	3	1.27
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	21	8.90
16:DEPT SHERIFF	26	11.02
17:PRISON GUARD	159	67.37

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	16	6.78
2:MEXICAN AMERICAN	17	7.20
3:PUERTO RICAN	1	0.42
4:CUBAN	1	0.42
5:HAWAIIAN	0	0.0
6:CHINESE	1	0.42
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	1	0.42
9:AMERICAN INDIAN	5	2.12
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	22	9.32
12:EUROPEAN, EAST	3	1.27
13:EUROPEAN, SOUTH	3	1.27
14:EUROPEAN, WEST	145	61.44
15:OTHER	7	2.97
16:WHITE AMERICAN	14	5.93
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
LEFT BLANK	1	0.42
YES	178	75.42
NO	57	24.15

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 236		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	208	88.14
LEFT	17	7.20
AMBIGUOUS	11	4.66

APPENDIX B-3: REGIONS

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

SAN DIEGO

N=385

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	385	83.39	184.94	10.09	22.24	58. -- 124.	128.00 -- 274.00
HEIGHT	385	MM	IN	MM	IN	MM	IN
FUNCTIONAL REACH	384	1793.96	70.63	57.97	2.28	1663. -- 1940.	65.47 -- 76.38
CHEST BREAOTH	384	826.80	32.55	36.78	1.45	732. -- 975.	28.82 -- 38.39
CHEST CIRCUMFERENCE	384	353.64	13.92	23.29	0.92	296. -- 430.	11.65 -- 16.93
WAIST CIRCUMFERENCE	385	1030.78	40.58	64.99	2.56	853. -- 1244.	33.58 -- 48.98
WAIST FRONT	384	904.71	35.62	74.26	2.94	738. -- 1170.	29.06 -- 46.06
HEAD CIRCUMFERENCE	384	418.34	16.47	24.12	0.95	363. -- 513.	14.29 -- 20.20
HAND CIRCUMFERENCE	385	579.21	22.80	14.76	0.58	537. -- 620.	21.14 -- 24.41
SHOULDER HEIGHT SITTING	385	214.81	8.46	8.99	0.35	192. -- 239.	7.56 -- 9.41
SITTING HEIGHT	385	618.66	24.36	28.75	1.13	535. -- 705.	21.06 -- 27.76
KNEE HEIGHT SITTING	383	936.18	36.86	31.65	1.25	837. -- 1020.	32.95 -- 40.16
BUTTOCK KNEE LENGTH	385	567.43	22.34	24.31	0.96	489. -- 625.	19.25 -- 24.61
SHOULDER BREAOTH	384	618.30	24.34	25.85	1.02	553. -- 702.	21.77 -- 27.64
HEAD LENGTH	385	501.54	19.75	25.74	1.01	425. -- 586.	16.73 -- 23.07
HEAD BREAOTH	385	198.84	7.83	6.63	0.26	178. -- 220.	7.01 -- 8.66
FACE BREAOTH	385	155.66	6.13	5.26	0.21	142. -- 170.	5.59 -- 6.69
FACE LENGTH	385	143.70	5.66	5.46	0.21	129. -- 160.	5.08 -- 6.30
LIP LENGTH	385	122.82	4.84	5.85	0.23	106. -- 141.	4.17 -- 5.55
HAND LENGTH	385	52.51	2.07	4.10	0.16	44. -- 65.	1.73 -- 2.56
FOREFINGER LENGTH	385	196.86	7.75	7.98	0.31	179. -- 224.	7.05 -- 8.82
HAND BREAOTH	385	129.93	5.12	7.04	0.28	108. -- 151.	4.25 -- 5.94
TRIGGER POSITION	385	90.69	3.57	3.83	0.15	79. -- 101.	3.11 -- 3.98
	287	60.84	2.63	6.87	0.27	52. -- 88.	2.05 -- 3.46

AGE DISTRIBUTION

MEAN VALUE 31.39
SE(MEAN) 0.31
SD DEVIATION 6.10
SE(SD DEV) 0.22

SYMMETRY---VETA I = 1.16
KURTOSIS---VETA II = 4.01
COEF. OF VARIATION = 19.4%

NUMBER OF SUBJECTS = 384

THE PERCENTILES

YEARS	
50.39	99TH
48.16	98TH
46.62	97TH
44.60	95TH
40.95	90TH
37.80	85TH
36.20	80TH
35.20	75TH
33.84	70TH
32.69	65TH
31.89	60TH
31.09	55TH
30.15	50TH
29.48	45TH
28.87	40TH
28.33	35TH
27.84	30TH
27.44	25TH
27.04	20TH
26.42	15TH
25.71	10TH
24.80	5TH
24.25	3RD
23.95	2ND
23.41	1ST

LENGTH OF SERVICE

MEAN VALUE 5.91
SE(MEAN) 0.28
SD DEVIATION 5.47
SE(SD DEV) 0.20

SYMMETRY---VETA I = 1.67
KURTOSIS---VETA II = 5.35
COEF. OF VARIATION = 92.6%

NUMBER OF SUBJECTS = 381

THE PERCENTILES

YEARS	
24.60	99TH
21.79	98TH
20.29	97TH
18.85	95TH
15.74	90TH
11.46	85TH
9.16	80TH
7.29	75TH
6.58	70TH
6.05	65TH
5.67	60TH
5.30	55TH
4.88	50TH
4.22	45TH
3.75	40TH
3.37	35TH
2.99	30TH
2.63	25TH
2.28	20TH
1.94	15TH
1.62	10TH
1.31	5TH
1.19	3RD
1.12	2ND
1.06	1ST

AGENCY		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	355	92.21
2:SHERIFF DEPARTMENT	30	7.79
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
0:LEFT BLANK	20	5.19
1:PATROL	251	65.19
2:TRAFFIC	35	9.09
3:INVESTIGATIONS	23	5.97
4:COMMUNICATIONS	3	0.78
5:ADMINISTRATION	8	2.08
6:OTHER	45	11.69

RANK		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
0:LEFT BLANK	1	0.26
1:ACADEMY	32	8.31
2:PATROLMAN 3	16	4.16
3:PATROLMAN 2	25	6.49
4:PATROLMAN 1	227	58.96
5:CORPORAL	5	1.30
6:SERGEANT	30	7.79
7:LIEUTENANT	10	2.60
8:MAJOR	0	0.0
9:CAPTAIN	2	0.52
10:INSPECTOR	1	0.26
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	1	0.26
15:OTHER	7	1.82
16:DEPT SHERIFF	28	7.27
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
0:LEFT BLANK	26	6.75
1:BLACK	16	4.16
2:MEXICAN AMERICAN	16	4.16
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	1	0.26
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	1	0.26
9:AMERICAN INDIAN	2	0.52
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	6	1.56
12:EUROPEAN, EAST	3	0.78
13:EUROPEAN, SOUTH	4	1.04
14:EUROPEAN, WEST	84	21.82
15:OTHER	3	0.78
16:WHITE AMERICAN	222	57.66
17:AMERICAN	1	0.26
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
LEFT BLANK	2	0.52
YES	281	72.99
NO	102	26.49

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 385		
	NUMBER	PER CENT
LEFT BLANK	1	0.26
RIGHT	337	87.53
LEFT	28	7.27
AMBIGUITOUS	19	4.94

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

LOS ANGELES
N=142

	NUMBER	MFAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG			LB
WEIGHT	141	76.30	168.21	7.60	16.76	59.	--	106.	130.00 --234.00
		MM	IN	MM	IN	MM			IN
HEIGHT	141	1776.48	69.94	49.77	1.96	1677.	--	1945.	66.02 -- 76.57
FUNCTIONAL REACH	141	817.11	32.17	38.47	1.51	710.	--	942.	27.95 -- 37.09
CHEST BREADTH	140	332.93	13.11	17.92	0.71	292.	--	377.	11.50 -- 14.84
CHEST CIRCUMFERENCE	141	983.38	38.72	49.72	1.96	862.	--	1133.	33.94 -- 44.61
WAIST CIRCUMFERENCE	141	832.89	32.79	53.35	2.10	705.	--	1006.	27.76 -- 39.61
WAIST FRONT	141	401.81	15.82	19.51	0.77	341.	--	458.	13.43 -- 18.03
HEAD CIRCUMFERENCE	142	567.63	22.35	14.61	0.58	531.	--	605.	20.91 -- 23.82
HAND CIRCUMFERENCE	140	210.07	8.27	9.47	0.37	188.	--	238.	7.40 -- 9.37
SHOULDER HEIGHT SITTING	142	608.89	23.97	24.47	0.96	556.	--	676.	21.89 -- 26.61
SITTING HEIGHT	142	922.65	36.32	27.10	1.07	858.	--	999.	33.78 -- 39.33
KNEE HEIGHT SITTING	142	559.58	22.03	22.39	0.88	508.	--	638.	20.00 -- 25.12
BUTTOCK KNEE LENGTH	142	606.66	23.88	23.87	0.94	557.	--	672.	21.93 -- 26.46
SHOULDER BREADTH	142	482.35	18.99	21.71	0.85	426.	--	540.	16.77 -- 21.26
HEAD LENGTH	142	197.29	7.77	7.10	0.28	176.	--	219.	6.93 -- 8.62
HEAD BREADTH	142	152.71	6.01	5.39	0.21	134.	--	170.	5.28 -- 6.69
FACE BREADTH	142	139.90	5.51	5.65	0.22	124.	--	155.	4.88 -- 6.10
FACE LENGTH	142	120.40	4.74	6.56	0.26	105.	--	138.	4.13 -- 5.43
LIP LENGTH	142	50.16	1.97	3.77	0.15	40.	--	59.	1.57 -- 2.32
HAND LENGTH	142	192.90	7.59	7.60	0.30	175.	--	216.	6.89 -- 8.50
FOREFINGER LENGTH	140	125.66	4.95	6.85	0.27	108.	--	152.	4.25 -- 5.98
HAND BREADTH	140	88.84	3.50	4.14	0.16	78.	--	99.	3.07 -- 3.90
TRIGGER POSITION	142	68.96	2.71	5.69	0.22	57.	--	88.	2.24 -- 3.46

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	25.60	YEARS		MEAN VALUE	1.06	YEARS	
SF(MEAN)	0.27	35.30	99TH	SF(MEAN)	0.04	3.58	99TH
SD DEVIATION	3.18	34.18	98TH	SD DEVIATION	0.46	2.58	98TH
SF(SD DEV)	0.19	33.39	97TH	SF(SD DEV)	0.03	2.00	97TH
****		31.99	95TH	****		1.98	95TH
		30.58	90TH			1.93	90TH
		29.65	85TH			1.87	85TH
		29.07	80TH			1.82	80TH
SYMMETRY---VETA I = 0.82		28.22	75TH	SYMMETRY---VETA I = 9.17		1.77	75TH
KURTOSIS---VETA II = 3.05		27.41	70TH	KURTOSIS---VETA II = 93.47		1.72	70TH
COEF. OF VARIATION = 12.4%		26.82	65TH	COEF. OF VARIATION = 43.5%		1.67	65TH
		26.45	60TH			1.62	60TH
		26.08	55TH			1.57	55TH
		25.50	50TH			1.51	50TH
		24.91	45TH			1.46	45TH
		24.52	40TH			1.41	40TH
		24.13	35TH			1.36	35TH
		23.79	30TH			1.31	30TH
		23.47	25TH			1.26	25TH
		23.15	20TH			1.21	20TH
		22.83	15TH			1.15	15TH
		22.53	10TH			1.10	10TH
		22.22	5TH			1.05	5TH
		22.10	3RD			1.03	3RD
		22.04	2ND			1.02	2ND
		21.70	1ST			1.01	1ST

AGENCY		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	129	90.85
2:SHERIFF DEPARTMENT	0	0.0
3:HIGHWAY PATROL	13	9.15
4:PRISON/PFN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	11	7.75
2:TRAFFIC	2	1.41
3:INVESTIGATIONS	0	0.0
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	0	0.0
6:OTHER	129	90.85

RANK		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	129	90.85
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	1	0.70
4:PATROLMAN 1	12	8.45
5:CORPORAL	0	0.0
6:SERGEANT	0	0.0
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	0	0.0
16:DEPT SHERIFF	0	0.0
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
0:LEFT BLANK	3	2.11
1:BLACK	9	6.34
2:MEXICAN AMERICAN	7	4.93
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	2	1.41
8:OTHER ORIENTAL	1	0.70
9:AMERICAN INDIAN	4	2.82
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	9	6.34
12:EUROPEAN, EAST	10	7.04
13:EUROPEAN, SOUTH	12	8.45
14:EUROPEAN, WEST	79	55.63
15:OTHER	4	2.82
16:WHITE AMERICAN	0	0.0
17:AMERICAN	2	1.41
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	98	69.01
NO	44	30.99

HANDINESS FOR WEAPON USAGE		
TOTAL NUMBER= 142		
	NUMBER	PER CENT
LEFT BLANK	1	0.70
RIGHT	126	88.73
LEFT	13	9.15
AMBIDEXTROUS	2	1.41

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

PHOENIX/TUCSON
N=114

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	114	83.97	185.11	9.80	21.61	64. -- 121.	142.00 -- 266.00
		MM	IN	MM	IN	MM	IN
HEIGHT	113	1782.96	70.20	65.71	2.59	1668. -- 1949.	65.67 -- 76.73
FUNCTIONAL REACH	114	835.13	32.88	42.14	1.66	735. -- 932.	28.94 -- 36.69
CHEST BREAOTH	114	350.54	13.80	21.96	0.86	306. -- 432.	12.05 -- 17.01
CHEST CIRCUMFERENCE	114	1033.01	40.67	62.32	2.45	858. -- 1265.	33.78 -- 49.80
WAIST CIRCUMFERENCE	114	916.25	36.07	73.99	2.91	740. -- 1198.	29.13 -- 47.17
WAIST FRONT	114	413.21	16.27	25.64	1.01	362. -- 500.	14.25 -- 19.68
HEAD CIRCUMFERENCE	114	576.92	22.71	16.08	0.63	533. -- 622.	20.98 -- 24.49
HAND CIRCUMFERENCE	114	214.92	8.46	9.84	0.39	190. -- 236.	7.48 -- 9.29
SHOULDER HEIGHT SITTING	114	612.70	24.12	28.67	1.13	550. -- 684.	21.65 -- 26.93
SITTING HEIGHT	114	927.10	36.50	32.09	1.26	840. -- 1005.	33.07 -- 39.57
KNEE HEIGHT SITTING	114	561.12	22.09	26.61	1.05	504. -- 629.	19.84 -- 24.76
BUTTOCK KNEE LENGTH	113	615.80	24.24	28.68	1.13	536. -- 692.	21.10 -- 27.24
SHOULDER BREAOTH	113	502.21	19.77	22.38	0.88	446. -- 568.	17.56 -- 22.36
HEAD LENGTH	114	198.01	7.80	6.62	0.26	181. -- 216.	7.13 -- 8.50
HEAD BREAOTH	114	155.53	6.12	4.71	0.19	143. -- 167.	5.63 -- 6.57
FACE BREAOTH	114	144.28	5.68	5.64	0.22	131. -- 159.	5.16 -- 6.26
FACE LENGTH	114	120.17	4.73	6.82	0.27	105. -- 136.	4.13 -- 5.35
LIP LENGTH	114	51.65	2.03	4.16	0.16	41. -- 66.	1.61 -- 2.60
HAND LENGTH	114	193.31	7.61	9.37	0.37	172. -- 216.	6.77 -- 8.50
FOREFINGER LENGTH	114	126.90	5.00	7.42	0.29	108. -- 145.	4.25 -- 5.71
HAND BREAOTH	114	90.61	3.57	4.22	0.17	77. -- 101.	3.03 -- 3.98
TRIGGER POSITION	114	69.18	2.72	6.44	0.25	54. -- 86.	2.13 -- 3.39

AGE DISTRIBUTION

MEAN VALUE 30.10
SE(MEAN) 0.68
SD DEVIATION 7.16
SE(SD DEV) 0.48

SYMMETRY---VETA I = 1.39
KURTOSIS---VETA II = 4.37
COEF. OF VARIATION = 23.8%

THE PERCENTILES

YEARS
53.45 99TH
49.80 98TH
48.85 97TH
45.83 95TH
43.33 90TH
38.25 85TH
35.50 80TH
32.50 75TH
31.17 70TH
30.36 65TH
29.25 60TH
28.59 55TH
28.09 50TH
27.76 45TH
27.47 40TH
27.18 35TH
26.78 30TH
26.17 25TH
25.43 20TH
24.69 15TH
24.00 10TH
22.83 5TH
22.10 3RD
21.60 2ND
21.05 1ST

LENGTH OF SERVICE

MEAN VALUE 3.76
SE(MEAN) 0.40
SD DEVIATION 4.20
SE(SD DEV) 0.28

SYMMETRY---VETA I = 1.97
KURTOSIS---VETA II = 6.25
COEF. OF VARIATION = 111.7%

THE PERCENTILES

YEARS
19.46 99TH
17.82 98TH
15.73 97TH
14.52 95TH
11.53 90TH
6.88 85TH
5.53 80TH
4.83 75TH
4.41 70TH
3.99 65TH
3.49 60TH
3.00 55TH
2.54 50TH
2.09 45TH
1.91 40TH
1.79 35TH
1.68 30TH
1.57 25TH
1.45 20TH
1.34 15TH
1.23 10TH
1.11 5TH
1.07 3RD
1.05 2ND
1.02 1ST

AGENCY		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	33	28.95
2:SHERIFF DEPARTMENT	68	59.65
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	13	11.40
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	38	33.33
2:TRAFFIC	12	10.53
3:INVESTIGATIONS	11	9.65
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	2	1.75
6:OTHER	51	44.74

RANK		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
0:LEFT BLANK	2	1.75
1:ACADEMY	37	32.46
2:PATROLMAN 3	2	1.75
3:PATROLMAN 2	2	1.75
4:PATROLMAN 1	30	26.32
5:CORPORAL	3	2.63
6:SERGEANT	4	3.51
7:LIEUTENANT	1	0.88
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIT CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	1	0.88
15:OTHER	6	5.26
16:DEPT SHERIFF	25	21.93
17:PRISON GUARD	1	0.88

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
0:LEFT BLANK	2	1.75
1:BLACK	2	1.75
2:MEXICAN AMERICAN	6	5.26
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	2	1.75
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	8	7.02
12:EUROPEAN, EAST	8	7.02
13:EUROPEAN, SOUTH	7	6.14
14:EUROPEAN, WEST	70	61.40
15:OTHER	5	4.39
16:WHITE AMERICAN	3	2.63
17:AMERICAN	1	0.88
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
LEFT BLANK	2	1.75
YES	81	71.05
NO	31	27.19

HANDINESS FOR WEAPON USAGE		
TOTAL NUMBER= 114		
	NUMBER	PER CENT
LEFT BLANK	2	1.75
RIGHT	104	91.23
LEFT	5	4.39
AMBIDEXTROUS	3	2.63

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

DALLAS/FORT WORTH

N=157

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG		LB	
WEIGHT	157	85.66	188.85	12.28	27.07	62.	--	122.	137.00 --268.00
		MM	IN	MM	IN	MM		IN	
HEIGHT	157	1793.36	70.60	56.70	2.23	1673.	--	1951.	65.87 -- 76.81
FUNCTIONAL REACH	157	817.58	32.19	39.45	1.55	705.	--	924.	27.76 -- 36.38
CHEST BREAOTH	155	352.41	13.87	25.81	1.02	295.	--	445.	11.61 -- 17.52
CHEST CIRCUMFERENCE	157	1044.78	41.13	77.44	3.05	856.	--	1299.	33.70 -- 51.14
WAIST CIRCUMFERENCE	156	934.17	36.78	90.89	3.58	748.	--	1180.	29.45 -- 46.46
WAIST FRONT	154	424.45	16.71	28.00	1.10	353.	--	500.	13.90 -- 19.68
HEAD CIRCUMFERENCE	157	578.15	22.76	13.95	0.55	542.	--	611.	21.34 -- 24.06
HAND CIRCUMFERENCE	156	216.92	8.54	11.25	0.44	182.	--	246.	7.17 -- 9.69
SHOULDER HEIGHT SITTING	157	629.01	24.76	27.61	1.09	549.	--	701.	21.61 -- 27.60
SITTING HEIGHT	156	938.99	36.97	28.76	1.13	854.	--	1003.	33.62 -- 39.49
KNFE HEIGHT SITTING	156	563.42	22.18	24.07	0.95	506.	--	632.	19.92 -- 24.88
BUTTOCK KNFE LENGTH	157	617.62	24.32	25.81	1.02	565.	--	683.	22.24 -- 26.89
SHOULDER BREAOTH	156	498.62	19.63	26.86	1.06	435.	--	589.	17.13 -- 23.19
HEAD LENGTH	157	198.78	7.83	6.56	0.26	183.	--	213.	7.20 -- 8.39
HEAD BREAOTH	157	155.08	6.11	4.93	0.19	140.	--	169.	5.51 -- 6.65
FACE BREAOTH	157	144.72	5.70	5.51	0.22	131.	--	158.	5.16 -- 6.22
FACE LENGTH	156	121.38	4.78	6.21	0.24	105.	--	141.	4.13 -- 5.55
LIP LENGTH	157	52.38	2.06	4.20	0.17	43.	--	63.	1.69 -- 2.48
HAND LENGTH	157	194.93	7.67	8.70	0.34	177.	--	224.	6.97 -- 8.82
FOREFINGER LENGTH	157	128.73	5.07	7.59	0.30	113.	--	148.	4.45 -- 5.83
HAND BREAOTH	156	91.13	3.59	4.85	0.19	79.	--	105.	3.11 -- 4.13
TRIGGER POSITION	157	68.79	2.71	6.53	0.26	54.	--	89.	2.13 -- 3.50

AGE DISTRIBUTION

MEAN VALUE	32.84
SF(MEAN)	0.68
SD DEVIATION	8.58
SF(SD DEV)	0.48

SYMMETRY---VFET I =	0.70
KURTOSIS---VFET II =	2.42
COEF. OF VARIATION =	26.1%

THE PERCENTILES

YEARS	
53.81	99TH
53.29	98TH
52.29	97TH
50.08	95TH
46.08	90TH
44.16	85TH
42.20	80TH
40.39	75TH
37.58	70TH
35.53	65TH
33.44	60TH
31.87	55TH
30.30	50TH
28.98	45TH
28.49	40TH
28.00	35TH
27.51	30TH
27.02	25TH
26.05	20TH
24.94	15TH
23.96	10TH
22.96	5TH
22.18	3RD
21.71	2ND
21.19	1ST

LENGTH OF SERVICE

MEAN VALUE	6.68
SF(MEAN)	0.45
SD DEVIATION	5.64
SF(SD DEV)	0.32

SYMMETRY---VFET I =	1.21
KURTOSIS---VFET II =	3.93
COEF. OF VARIATION =	84.4%

THE PERCENTILES

YEARS	
24.43	99TH
23.43	98TH
20.76	97TH
19.15	95TH
15.65	90TH
13.48	85TH
10.58	80TH
9.59	75TH
8.69	70TH
7.94	65TH
7.41	60TH
6.79	55TH
5.79	50TH
4.85	45TH
4.36	40TH
3.86	35TH
3.34	30TH
2.69	25TH
1.95	20TH
1.71	15TH
1.48	10TH
1.24	5TH
1.14	3RD
1.10	2ND
1.05	1ST

AGENCY		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	125	79.62
2:SHERIFF DEPARTMENT	21	13.38
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	11	7.01
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
0:LEFT BLANK	3	1.91
1:PATROL	108	68.79
2:TRAFFIC	1	0.64
3:INVESTIGATIONS	5	3.18
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	3	1.91
6:OTHER	37	23.57

RANK		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	2	1.27
2:PATROLMAN 3	11	7.01
3:PATROLMAN 2	6	3.82
4:PATROLMAN 1	104	66.24
5:CORPORAL	1	0.64
6:SERGEANT	7	4.46
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	2	1.27
16:DEPT SHERIFF	12	7.64
17:PRISON GUARD	10	6.37

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
0:LEFT BLANK	4	2.55
1:BLACK	9	5.73
2:MEXICAN AMERICAN	8	5.10
3:PUERTO RICAN	0	0.0
4:CURAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	5	3.18
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	7	4.46
12:EUROPEAN, EAST	5	3.18
13:EUROPEAN, SOUTH	3	1.91
14:EUROPEAN, WEST	76	48.41
15:OTHER	21	13.38
16:WHITE AMERICAN	19	12.10
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
LEFT BLANK	1	0.64
YES	92	58.60
NO	64	40.76

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 157		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	139	88.54
LEFT	11	7.01
AMBIDEXTROUS	7	4.46

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

HOUSTON/GALVESTON
N=329

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	329	86.37	190.42	16.01	35.30	56. -- 144.	124.00 -- 318.00
		MM	IN	MM	IN	MM	IN
HEIGHT	329	1770.00	69.71	64.20	2.53	1626. -- 2067.	64.02 -- 81.38
FUNCTIONAL REACH	329	838.25	33.00	45.12	1.78	705. -- 1012.	27.76 -- 39.84
CHEST BREADTH	329	352.65	13.88	33.20	1.31	283. -- 471.	11.14 -- 18.54
CHEST CIRCUMFERENCE	329	1033.58	40.69	103.05	4.06	818. -- 1366.	32.20 -- 53.78
WAIST CIRCUMFERENCE	329	943.95	37.16	123.41	4.86	679. -- 1340.	26.73 -- 52.76
WAIST FRONT	329	413.83	16.29	32.59	1.28	340. -- 523.	13.39 -- 20.59
HEAD CIRCUMFERENCE	329	575.77	22.67	16.07	0.63	533. -- 630.	20.98 -- 24.80
HAND CIRCUMFERENCE	329	215.83	8.50	10.48	0.41	188. -- 250.	7.40 -- 9.84
SHOULDER HEIGHT SITTING	329	610.02	24.04	28.76	1.13	526. -- 719.	20.71 -- 28.31
SITTING HEIGHT	329	902.86	35.55	34.57	1.35	806. -- 1028.	31.73 -- 40.47
KNEE HEIGHT SITTING	329	548.47	21.59	26.18	1.03	470. -- 650.	18.50 -- 25.59
BUTTOCK KNEE LENGTH	329	613.44	24.15	31.25	1.23	531. -- 724.	20.91 -- 28.50
SHOULDER BREADTH	328	495.52	19.50	35.97	1.42	415. -- 604.	16.34 -- 23.78
HEAD LENGTH	329	198.50	7.82	6.97	0.27	179. -- 220.	7.05 -- 8.66
HEAD BREADTH	329	155.12	6.11	5.65	0.22	140. -- 174.	5.51 -- 6.85
FACE BREADTH	329	143.33	5.64	6.53	0.26	127. -- 162.	5.00 -- 6.38
FACE LENGTH	329	121.40	4.78	6.47	0.25	103. -- 148.	4.06 -- 5.83
LIP LENGTH	329	50.59	1.98	4.57	0.18	39. -- 65.	1.54 -- 2.56
HAND LENGTH	327	190.92	7.52	9.54	0.38	167. -- 232.	6.57 -- 9.13
FOREFINGER LENGTH	328	123.86	4.88	7.53	0.30	106. -- 148.	4.17 -- 5.83
HAND BREADTH	327	89.53	3.52	4.46	0.18	78. -- 103.	3.07 -- 4.06
TRIGGER POSITION	311	65.15	2.56	6.13	0.24	52. -- 88.	2.05 -- 3.46

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
		YEARS				YEARS	
MEAN VALUE	31.05	62.80	99TH	MEAN VALUE	3.95	24.88	99TH
SE(MEAN)	0.59	61.20	98TH	SE(MEAN)	0.31	21.88	98TH
SD DEVIATION	10.58	59.70	97TH	SD DEVIATION	5.60	21.07	97TH
SE(SD DEV)	0.42	55.00	95TH	SE(SD DEV)	0.22	18.90	95TH
****		48.00	90TH	****		12.15	90TH
		43.00	85TH			7.87	85TH
		39.00	80TH			6.47	80TH
SYMMETRY---VETA I = 1.30		35.63	75TH	SYMMETRY---VETA I = 2.42		5.35	75TH
KURTOSIS---VETA II = 3.94		33.40	70TH	KURTOSIS---VETA II = 8.88		3.86	70TH
COEF. OF VARIATION = 34.1%		31.58	65TH	COEF. OF VARIATION = 141.6%		2.83	65TH
		29.93	60TH			1.98	60TH
		28.83	55TH			1.90	55TH
		27.95	50TH			1.81	50TH
		27.19	45TH			1.73	45TH
		26.37	40TH			1.65	40TH
		25.47	35TH			1.57	35TH
		24.64	30TH			1.49	30TH
		23.90	25TH			1.41	25TH
		23.14	20TH			1.33	20TH
		22.43	15TH			1.24	15TH
		21.65	10TH			1.16	10TH
		20.67	5TH			1.08	5TH
		20.24	3RD			1.05	3RD
		20.03	2ND			1.03	2ND
		19.44	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	108	32.83
2: SHERIFF DEPARTMENT	111	33.74
3: HIGHWAY PATROL	0	0.0
4: PRISON/PEN.	50	15.20
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

DUTY		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	71	21.58
2: TRAFFIC	3	0.91
3: INVESTIGATIONS	10	3.04
4: COMMUNICATIONS	1	0.30
5: ADMINISTRATION	19	5.78
6: OTHER	225	68.39

RANK		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	84	25.53
2: PATROLMAN 3	2	0.61
3: PATROLMAN 2	0	0.0
4: PATROLMAN 1	61	18.54
5: CORPORAL	0	0.0
6: SERGEANT	18	5.47
7: LIEUTENANT	12	3.65
8: MAJOR	2	0.61
9: CAPTAIN	6	1.82
10: INSPECTOR	1	0.30
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	1	0.30
13: CHIEF	1	0.30
14: MARSHAL	0	0.0
15: OTHER	7	2.13
16: DEPT SHERIFF	95	28.88
17: PRISON GUARD	39	11.85

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	30	9.12
2: MEXICAN AMERICAN	30	9.12
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	2	0.61
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	1	0.30
9: AMERICAN INDIAN	13	3.95
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	8	2.43
12: EUROPEAN, EAST	11	3.34
13: EUROPEAN, SOUTH	13	3.95
14: EUROPEAN, WEST	192	58.36
15: OTHER	3	0.91
16: WHITE AMERICAN	25	7.60
17: AMERICAN	1	0.30
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	198	60.18
NO	131	39.82

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 329		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	305	92.71
LEFT	21	6.38
AMBIDEXTROUS	3	0.91

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

NEW ORLEANS/BATON ROUGE

N=106

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG		LB	
WEIGHT	106	83.04	184.41	12.24	26.99	59.	--	124.	131.00 --273.00
HEIGHT	106	MM	IN	MM	IN	MM		IN	
FUNCTIONAL REACH	106	1770.28	69.93	62.11	2.45	1651.	--	1956.	65.00 -- 77.01
CHEST BREADTH	106	825.09	32.51	39.45	1.55	740.	--	961.	29.13 -- 37.83
CHEST CIRCUMFERENCE	106	333.00	13.14	29.75	1.01	271.	--	405.	10.67 -- 15.94
WAIST CIRCUMFERENCE	106	997.00	39.25	80.25	3.16	848.	--	1273.	33.39 -- 50.12
WAIST FRONT	106	905.95	39.67	89.86	3.54	706.	--	1152.	27.80 -- 45.35
HEAD CIRCUMFERENCE	106	409.27	16.11	25.06	0.99	340.	--	474.	13.39 -- 18.66
SHOULDER HEIGHT SITTING	106	571.97	22.52	16.34	0.64	532.	--	624.	20.94 -- 24.57
SITTING HEIGHT	106	213.08	8.39	10.09	0.40	186.	--	235.	7.32 -- 9.25
KNEE HEIGHT SITTING	106	607.98	23.94	31.91	1.26	520.	--	680.	20.47 -- 26.77
BUTTOCK KNEE LENGTH	106	904.13	35.60	37.26	1.47	795.	--	1012.	31.30 -- 39.84
SHOULDER BREADTH	106	348.94	21.61	25.10	0.99	493.	--	599.	19.41 -- 23.58
HEAD LENGTH	106	610.11	24.02	27.03	1.06	555.	--	675.	21.85 -- 26.57
HEAD BREADTH	106	478.52	18.84	28.04	1.13	412.	--	550.	16.22 -- 21.89
FACE BREADTH	106	158.10	7.80	7.64	0.30	180.	--	222.	7.09 -- 8.74
FACE LENGTH	106	154.22	6.07	4.95	0.20	142.	--	167.	5.59 -- 6.57
TIP LENGTH	106	143.19	5.64	5.13	0.20	129.	--	154.	5.08 -- 6.06
HAND LENGTH	106	119.57	4.70	6.09	0.24	107.	--	144.	4.21 -- 5.67
FOREFINGER LENGTH	106	49.73	1.96	3.94	0.16	42.	--	68.	1.65 -- 2.68
HAND BREADTH	106	184.98	7.28	7.73	0.30	164.	--	206.	6.46 -- 8.11
TRIGGER POSITION	106	122.37	4.82	7.49	0.29	108.	--	139.	4.25 -- 5.47
	106	89.00	3.50	4.18	0.16	78.	--	97.	3.07 -- 3.82
	106	65.85	2.59	5.55	0.22	52.	--	82.	2.05 -- 3.23

AGE DISTRIBUTION

MEAN VALUE 26.42
SE(MEAN) 0.51
SD DEVIATION 5.26
SE(SD DEV) 0.36

SYMMETRY---VETA I = 3.05
KURTOSIS---VETA II = 25.50
COEF. OF VARIATION = 19.94

THE PERCENTILES

YEARS
38.94 99TH
37.94 98TH
37.41 97TH
33.90 95TH
31.68 90TH
30.37 85TH
29.30 80TH
28.65 75TH
28.12 70TH
27.63 65TH
27.15 60TH
26.63 55TH
26.10 50TH
25.69 45TH
25.31 40TH
24.91 35TH
24.38 30TH
23.81 25TH
23.15 20TH
22.66 15TH
22.22 10TH
21.32 5TH
20.79 3RD
20.53 2ND
20.26 1ST

LENGTH OF SERVICE

MEAN VALUE 1.92
SE(MEAN) 0.19
SD DEVIATION 1.93
SE(SD DEV) 0.13

SYMMETRY---VETA I = 2.88
KURTOSIS---VETA II = 12.44
COEF. OF VARIATION = 101.04

THE PERCENTILES

YEARS
10.94 99TH
9.88 98TH
6.94 97TH
6.23 95TH
4.73 90TH
3.90 85TH
3.31 80TH
2.58 75TH
1.98 70TH
1.91 65TH
1.84 60TH
1.77 55TH
1.70 50TH
1.63 45TH
1.56 40TH
1.49 35TH
1.42 30TH
1.35 25TH
1.28 20TH
1.21 15TH
1.14 10TH
1.07 5TH
1.04 3RD
1.03 2ND
1.01 1ST

AGENCY		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	29	27.36
2:SHERIFF DEPARTMENT	31	29.25
3:HIGHWAY PATROL	46	43.40
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	38	35.85
2:TRAFFIC	36	33.96
3:INVESTIGATIONS	4	3.77
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	1	0.94
6:OTHER	27	25.47

RANK		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	75	70.75
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	0	0.0
5:CORPORAL	0	0.0
6:SERGEANT	5	4.72
7:LIEUTENANT	1	0.94
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	4	3.77
16:DEPT SHERIFF	21	19.81
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	1	0.94
1:BLACK	5	4.72
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	2	1.89
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	1	0.94
13:EUROPEAN, SOUTH	12	11.32
14:EUROPEAN, WEST	69	65.09
15:OTHER	0	0.0
16:WHITE AMERICAN	16	15.09
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	69	65.09
NO	37	34.91

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	99	93.40
LEFT	6	5.66
AMBIGUOUS	1	0.94

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

MAIMI/FORT LAUDERDALE
N=174

	NUMBFR	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG	LB		
WEIGHT	174	82.37	181.59	10.90	24.03	59.	--	117.	130.00 --258.00
		MM	IN	MM	IN	MM	IN		
HEIGHT	174	1775.29	69.89	61.52	2.42	1597.	--	1917.	62.87 -- 75.47
FUNCTIONAL REACH	172	840.36	33.08	43.52	1.71	721.	--	974.	28.39 -- 38.35
CHEST BREAOTH	174	346.83	13.65	22.33	0.88	301.	--	417.	11.85 -- 16.42
CHEST CIRCUMFERENCE	174	1018.68	40.11	68.80	2.71	847.	--	1198.	33.35 -- 47.17
WAIST CIRCUMFERENCE	174	892.26	35.13	77.35	3.05	720.	--	1123.	28.35 -- 44.21
WAIST FRONT	174	408.59	16.09	26.17	1.03	344.	--	492.	13.54 -- 19.37
HEAD CIRCUMFERENCE	171	574.54	22.62	16.35	0.64	524.	--	613.	20.63 -- 24.13
HAND CIRCUMFERENCE	174	214.22	8.43	9.22	0.36	185.	--	235.	7.28 -- 9.25
SHOULDER HEIGHT SITTING	173	614.22	24.18	27.31	1.08	553.	--	695.	21.77 -- 27.36
SITTING HEIGHT	173	920.67	36.25	32.31	1.27	833.	--	1004.	32.80 -- 39.53
KNEE HEIGHT SITTING	174	560.79	22.08	25.32	1.00	501.	--	628.	19.72 -- 24.72
BUTTOCK KNEE LENGTH	174	612.49	24.11	26.47	1.04	544.	--	678.	21.42 -- 26.69
SHOULDER BREAOTH	174	497.56	19.59	27.18	1.07	431.	--	584.	16.97 -- 22.99
HEAD LENGTH	174	196.74	7.75	6.90	0.27	177.	--	216.	6.97 -- 8.50
HEAD BREAOTH	174	154.32	6.08	5.37	0.21	142.	--	167.	5.59 -- 6.57
FACE BREAOTH	174	142.13	5.60	6.06	0.24	124.	--	157.	4.88 -- 6.18
FACE LENGTH	174	119.63	4.71	6.51	0.26	105.	--	141.	4.13 -- 5.55
LIP LENGTH	174	51.42	2.02	4.03	0.16	42.	--	67.	1.65 -- 2.64
HAND LENGTH	174	195.22	7.69	8.35	0.33	177.	--	219.	6.97 -- 8.62
FOREFINGER LENGTH	174	127.32	5.01	7.45	0.29	110.	--	150.	4.33 -- 5.91
HAND BREAOTH	173	90.64	3.57	4.01	0.16	78.	--	105.	3.07 -- 4.13
TRIGGER POSITION	170	66.32	2.61	5.88	0.23	53.	--	84.	2.09 -- 3.31

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	28.87	YEARS		MEAN VALUE	3.16	YEARS	
SF(MEAN)	0.53	48.15	99TH	SF(MEAN)	0.34	25.26	99TH
SD DEVIATION	6.95	46.30	98TH	SD DEVIATION	4.50	18.52	98TH
SF(SD OFV)	0.38	45.73	97TH	SE(SD OFV)	0.24	15.39	97TH
****		44.88	95TH	****		14.33	95TH
		41.50	90TH			9.80	90TH
		36.64	85TH			6.48	85TH
		35.20	80TH			4.68	80TH
SYMMETRY---VFETA I =	1.08	33.75	75TH	SYMMETRY---VFETA I =	2.69	3.90	75TH
KURTOSIS---VFETA II =	3.27	31.00	70TH	KURTOSIS---VFETA II =	10.64	2.58	70TH
COEF. OF VARIATION =	24.18	29.65	65TH	COEF. OF VARIATION =	142.52	1.97	65TH
		28.75	60TH			1.90	60TH
		27.77	55TH			1.82	55TH
		27.00	50TH			1.75	50TH
		26.15	45TH			1.67	45TH
		25.67	40TH			1.60	40TH
		25.26	35TH			1.52	35TH
		24.79	30TH			1.45	30TH
		24.18	25TH			1.38	25TH
		23.67	20TH			1.30	20TH
		23.19	15TH			1.22	15TH
		22.58	10TH			1.15	10TH
		21.81	5TH			1.07	5TH
		21.39	3RD			1.04	3RD
		21.17	2ND			1.03	2ND
		20.85	1ST			1.01	1ST

AGENCY		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	143	82.18
2:SHERIFF DEPARTMENT	18	10.34
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	13	7.47
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	53	30.46
2:TRAFFIC	6	3.45
3:INVESTIGATIONS	6	3.45
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	4	2.30
6:OTHER	105	60.34

RANK		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	95	54.60
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	3	1.72
4:PATROLMAN 1	47	27.01
5:CORPORAL	0	0.0
6:SERGEANT	5	2.87
7:LIEUTENANT	5	2.87
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	0	0.0
16:DEPT SHERIFF	6	3.45
17:PRISON GUARD	13	7.47

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
0:LEFT BLANK	2	1.15
1:BLACK	10	5.75
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	1	0.57
4:CUBAN	11	6.32
5:HAWAIIAN	1	0.57
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	1	0.57
9:AMERICAN INDIAN	2	1.15
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	18	10.34
12:EUROPEAN, EAST	15	8.62
13:EUROPEAN, SOUTH	15	8.62
14:EUROPEAN, WEST	92	52.87
15:OTHER	5	2.87
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	1	0.57

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
LEFT BLANK	1	0.57
YES	97	55.75
NO	76	43.68

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 174		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	150	86.21
LEFT	16	9.20
AMBIDEXTROUS	8	4.60

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

ATLANTA
N=147

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	147	83.23	183.49	13.11	28.90	56. -- 130.	124.00 -- 286.00
		MM	IN	MM	IN	MM	IN
HEIGHT	147	1776.00	69.92	53.63	2.11	1635. -- 1952.	64.37 -- 76.85
FUNCTIONAL REACH	146	827.09	32.56	40.13	1.58	715. -- 958.	28.15 -- 37.72
CHEST BREADTH	146	341.82	13.46	28.04	1.10	273. -- 408.	10.75 -- 16.06
CHEST CIRCUMFERENCE	147	1020.66	40.18	89.97	3.54	806. -- 1291.	31.73 -- 50.83
WAIST CIRCUMFERENCE	147	914.63	36.01	107.91	4.25	700. -- 1291.	27.56 -- 50.83
WAIST FRONT	145	420.27	16.55	30.97	1.22	342. -- 590.	13.46 -- 23.23
HEAD CIRCUMFERENCE	147	576.05	22.68	16.18	0.64	538. -- 631.	21.18 -- 24.84
HAND CIRCUMFERENCE	145	212.01	8.35	10.30	0.41	188. -- 250.	7.40 -- 9.84
SHOULDER HEIGHT SITTING	146	610.99	24.05	30.19	1.19	540. -- 702.	21.26 -- 27.64
SITTING HEIGHT	146	922.44	36.32	35.16	1.38	836. -- 1025.	32.91 -- 40.35
KNEE HEIGHT SITTING	147	561.52	22.11	24.54	0.97	496. -- 630.	19.53 -- 24.80
BUTTOCK KNEE LENGTH	147	617.18	24.30	25.35	1.00	556. -- 695.	21.89 -- 27.36
SHOULDER BREADTH	146	491.99	19.37	31.33	1.23	421. -- 644.	16.57 -- 25.35
HEAD LENGTH	146	198.99	7.83	7.32	0.29	176. -- 225.	6.93 -- 8.86
HEAD BREADTH	147	153.76	6.05	5.45	0.21	141. -- 167.	5.55 -- 6.57
FACE BREADTH	147	143.10	5.63	5.89	0.23	120. -- 160.	4.72 -- 6.30
FACE LENGTH	146	121.71	4.79	6.29	0.25	106. -- 136.	4.17 -- 5.35
LIP LENGTH	146	52.21	2.06	3.97	0.16	44. -- 63.	1.73 -- 2.48
HAND LENGTH	147	194.33	7.65	8.82	0.35	165. -- 215.	6.50 -- 8.46
FOREFINGER LENGTH	146	126.99	5.00	7.99	0.31	109. -- 151.	4.29 -- 5.94
HAND BREADTH	147	89.54	3.53	4.34	0.17	79. -- 101.	3.11 -- 3.98
TRIGGER POSITION	146	70.78	2.79	6.26	0.25	60. -- 89.	2.36 -- 3.50

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	33.75	YEARS		MEAN VALUE	5.82	YEARS	
SE(MEAN)	0.96	60.54	99TH	SE(MEAN)	0.60	28.28	99TH
SD DEVIATION	11.56	58.69	98TH	SD DEVIATION	7.15	27.12	98TH
SE(SD DEV)	0.68	58.21	97TH	SE(SD DEV)	0.42	26.34	97TH
****		57.23	95TH	****		20.96	95TH
		53.68	90TH			17.72	90TH
		51.55	85TH			15.40	85TH
SYMMETRY---VETA I = 0.84		45.70	80TH	SYMMETRY---VETA I = 1.51		12.37	80TH
KURTOSIS---VETA II = 2.39		41.50	75TH	KURTOSIS---VETA II = 4.22		10.00	75TH
COEF. OF VARIATION = 34.2%		39.04	70TH	COEF. OF VARIATION = 122.9%		5.95	70TH
		37.38	65TH			4.43	65TH
		32.80	60TH			3.58	60TH
****		30.79	55TH	****		2.95	55TH
		29.75	50TH			2.50	50TH
NUMBER OF SUBJECTS = 146		27.81	45TH	NUMBER OF SUBJECTS = 144		2.05	45TH
		27.20	40TH			1.90	40TH
		26.39	35TH			1.79	35TH
		25.53	30TH			1.67	30TH
		24.83	25TH			1.56	25TH
		24.35	20TH			1.45	20TH
		23.74	15TH			1.34	15TH
		22.86	10TH			1.22	10TH
		22.13	5TH			1.11	5TH
		21.73	3RD			1.07	3RD
		21.49	2ND			1.04	2ND
		21.24	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	98	66.67
2:SHERIFF DEPARTMENT	10	6.80
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	39	26.53
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	80	54.42
2:TRAFFIC	0	0.0
3:INVESTIGATIONS	0	0.0
4:COMMUNICATIONS	1	0.68
5:ADMINISTRATION	12	8.16
6:OTHER	54	36.73

RANK		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	15	10.20
2:PATROLMAN 3	4	2.72
3:PATROLMAN 2	1	0.68
4:PATROLMAN 1	67	45.58
5:CORPORAL	0	0.0
6:SERGEANT	8	5.44
7:LIEUTENANT	5	3.40
8:MAJOR	0	0.0
9:CAPTAIN	1	0.68
10:INSPECTOR	0	0.0
11:ASSLT CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	7	4.76
16:DEPT SHERIFF	10	6.80
17:PRISON GUARD	29	19.73

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	32	21.77
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CURAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	4	2.72
10:FAST INDIAN	1	0.68
11:EUROPEAN, NORTH	6	4.08
12:EUROPEAN, EAST	2	1.36
13:EUROPEAN, SOUTH	2	1.36
14:EUROPEAN, WEST	77	52.38
15:OTHER	15	10.20
16:WHITE AMERICAN	8	5.44
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	101	68.71
NO	46	31.29

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 147		
	NUMBER	PER CENT
LEFT BLANK	2	1.36
RIGHT	132	89.80
LEFT	8	5.44
AMBIGUOUS	5	3.40

LAW ENFORCEMENT OFFICER 800Y MEASUREMENT SURVEY STATISTICS

WASHINGTON D.C.

N=242

	NUMBFR	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
		MM	IN	MM	IN	MM	IN
WEIGHT	242	80.90	178.36	9.92	21.87	57. -- 108.	126.00 -- 239.00
HEIGHT	242	1779.91	70.08	58.68	2.31	1630. -- 1964.	64.17 -- 77.32
FUNCTIONAL REACH	242	826.07	32.52	39.58	1.56	711. -- 968.	27.99 -- 38.11
CHEST BREAOTH	242	340.81	13.42	22.38	0.88	283. -- 419.	11.14 -- 16.50
CHEST CIRCUMFFRENC	242	991.67	39.04	66.61	2.62	790. -- 1182.	31.10 -- 46.54
WAIST CIRCUMFFRENC	242	860.93	33.89	77.70	3.06	675. -- 1074.	26.57 -- 42.28
WAIST FRONT	242	404.16	15.91	23.48	0.92	342. -- 472.	13.46 -- 18.58
HEAD CIRCUMFFRENC	240	573.08	22.56	15.64	0.62	528. -- 608.	20.79 -- 23.94
HAND CIRCUMFFRENC	241	212.49	8.37	9.88	0.39	180. -- 243.	7.09 -- 9.57
SHOULDER HEIGHT SITTING	240	603.08	23.74	32.78	1.29	517. -- 694.	20.35 -- 27.32
SITTING HEIGHT	241	902.39	35.53	36.33	1.43	789. -- 1001.	31.06 -- 39.41
KNEE HEIGHT SITTING	239	559.67	22.03	25.72	1.01	499. -- 653.	19.65 -- 25.71
BUTTOCK KNEE LENGTH	241	620.93	24.45	28.61	1.13	544. -- 706.	21.42 -- 27.80
SHOULDER BREAOTH	240	491.78	19.36	25.19	0.99	418. -- 576.	16.46 -- 22.68
HEAD LENGTH	242	197.67	7.78	6.88	0.27	180. -- 220.	7.09 -- 8.66
HEAD BREAOTH	242	152.86	6.02	5.51	0.22	140. -- 167.	5.51 -- 6.57
FACE BREAOTH	242	140.71	5.54	5.74	0.23	125. -- 156.	4.92 -- 6.14
FACE LENGTH	241	119.59	4.71	6.56	0.26	103. -- 142.	4.06 -- 5.59
LIP LENGTH	242	51.76	2.04	4.39	0.17	41. -- 65.	1.61 -- 2.56
HAND LENGTH	241	195.36	7.69	9.64	0.38	170. -- 228.	6.69 -- 8.98
FOREFINGER LENGTH	242	125.08	4.92	7.78	0.31	108. -- 152.	4.25 -- 5.98
HAND BREAOTH	242	89.90	3.54	4.16	0.16	75. -- 102.	2.95 -- 4.02
TRIGGER POSITION	242	67.81	2.67	6.68	0.26	52. -- 89.	2.05 -- 3.50

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	25.84	YEARS		MEAN VALUE	2.25	YEARS	
SE(MEAN)	0.34	45.58	99TH	SE(MEAN)	0.16	14.29	99TH
SD DEVIATION	5.35	44.03	98TH	SD DEVIATION	2.50	13.08	98TH
SE(SD DEV)	0.24	40.87	97TH	SE(SD DEV)	0.12	9.74	97TH
****		37.98	95TH	****		6.23	95TH
		31.73	90TH			4.89	90TH
		30.21	85TH			4.56	85TH
SYMMETRY---VETA I =	1.61	29.39	80TH	SYMMETRY---VETA I =	3.74	4.23	80TH
KURTOSIS---VETA II =	0.25	28.68	75TH	KURTOSIS---VETA II =	22.11	3.81	75TH
COEF. OF VARIATION =	20.74	27.97	70TH	COEF. OF VARIATION =	113.84	3.13	70TH
		27.37	65TH			1.97	65TH
		26.73	60TH			1.89	60TH
****		26.06	55TH	****		1.62	55TH
		25.35	50TH			1.74	50TH
NUMBER OF SUBJECTS =	242	24.76	45TH	NUMBER OF SUBJECTS =	242	1.67	45TH
		24.27	40TH			1.59	40TH
****		23.62	35TH	****		1.52	35TH
		22.76	30TH			1.45	30TH
		21.97	25TH			1.37	25TH
		21.70	20TH			1.30	20TH
		21.44	15TH			1.22	15TH
		21.18	10TH			1.15	10TH
		20.65	5TH			1.07	5TH
		20.21	3RD			1.04	3RD
		19.96	2ND			1.03	2ND
		19.35	1ST			1.01	1ST

<u>AGENCY</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	159	65.70
2:SHERIFF DEPARTMENT	44	18.18
3:HIGHWAY PATROL	39	16.12
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	63	26.03
2:TRAFFIC	3	1.24
3:INVESTIGATIONS	16	6.61
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	18	7.44
6:OTHER	142	58.68

<u>RANK</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	138	57.02
2:PATROLMAN 3	5	2.07
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	87	35.95
5:CORPORAL	0	0.0
6:SERGEANT	6	2.48
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	4	1.65
16:DEPT SHERIFF	2	0.83
17:PRISON GUARD	0	0.0

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	67	27.69
2:MEXICAN AMERICAN	1	0.41
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	3	1.24
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	12	4.96
12:EUROPEAN, EAST	14	5.79
13:EUROPEAN, SOUTH	9	3.72
14:EUROPEAN, WEST	125	51.65
15:OTHER	5	2.07
16:WHITE AMERICAN	5	2.07
17:AMERICAN	0	0.0
18:CANADIAN	1	0.41
19:SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	124	51.24
NO	118	48.76

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 242		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	208	85.95
LEFT	22	9.09
AMBIDEXTROUS	12	4.96

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

NEW YORK
N=304

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	304	79.65	175.61	10.03	22.12	59. --	117. 131.00 --258.00
		MM	IN	MM	IN	MM	IN
HEIGHT	303	1767.27	69.58	47.58	1.87	1668. --	1912. 65.67 -- 75.28
FUNCTIONAL REACH	304	806.96	31.77	37.02	1.46	705. --	896. 27.76 -- 35.28
CHEST BREAOTH	304	339.26	13.36	23.36	0.92	281. --	426. 11.06 -- 16.77
CHEST CIRCUMFERENCE	304	989.69	38.96	65.57	2.58	850. --	1260. 33.46 -- 49.61
WAIST CIRCUMFERENCE	304	873.71	34.40	80.02	3.15	696. --	1233. 27.40 -- 48.54
WAIST FRONT	304	407.39	16.04	22.84	0.90	356. --	513. 14.02 -- 20.20
HEAD CIRCUMFERENCE	303	568.96	22.40	14.54	0.57	532. --	611. 20.94 -- 24.06
HAND CIRCUMFERENCE	304	209.72	8.26	9.47	0.37	182. --	241. 7.17 -- 9.49
SHOULDER HEIGHT SITTING	304	610.95	24.05	25.96	1.02	528. --	679. 20.79 -- 26.73
SITTING HEIGHT	304	915.77	36.05	30.45	1.20	819. --	1009. 32.24 -- 39.72
KNEE HEIGHT SITTING	304	555.05	21.85	21.31	0.84	501. --	621. 19.72 -- 24.45
BUTTOCK KNEE LENGTH	304	608.79	23.97	23.88	0.94	552. --	669. 21.73 -- 26.34
SHOULDER BREADTH	304	483.49	19.03	26.90	1.06	408. --	576. 16.06 -- 22.68
HEAD LENGTH	304	196.52	7.74	7.05	0.28	165. --	212. 6.50 -- 8.35
HEAD BREADTH	304	153.19	6.03	5.84	0.23	139. --	173. 5.47 -- 6.81
FACE BREAOTH	304	141.64	5.58	6.00	0.24	126. --	161. 4.96 -- 6.34
FACE LENGTH	304	121.42	4.78	6.28	0.25	105. --	140. 4.13 -- 5.51
LIP LENGTH	304	50.36	1.98	4.39	0.17	37. --	65. 1.46 -- 2.56
HAND LENGTH	304	193.39	7.61	8.33	0.33	173. --	223. 6.81 -- 8.78
FOREFINGER LENGTH	303	125.51	4.94	6.91	0.27	105. --	144. 4.13 -- 5.67
HAND BREAOTH	304	88.87	3.50	4.23	0.17	76. --	103. 2.99 -- 4.06
TRIGGER POSITION	303	68.37	2.69	7.26	0.29	52. --	89. 2.05 -- 3.50

AGE OISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	27.13	YEARS		MEAN VALUE	3.11	YEARS	
SE(MEAN)	0.36	49.45	99TH	SE(MEAN)	0.29	22.96	99TH
SD DEVIATION	6.26	47.96	98TH	SD DEVIATION	4.97	19.46	98TH
SE(SD DEV)	0.25	45.47	97TH	SE(SD DEV)	0.20	18.29	97TH
****		41.48	95TH	****		16.93	95TH
		33.96	90TH			9.87	90TH
		31.52	85TH			6.20	85TH
SYMMETRY---VETA I =	2.10	30.53	80TH	SYMMETRY---VETA I =	2.59	4.73	80TH
KURTOSIS---VETA II =	8.49	29.70	75TH	KURTOSIS---VETA II =	9.10	1.95	75TH
COEF. OF VARIATION =	23.0%	28.69	70TH	COEF. OF VARIATION =	160.2%	1.88	70TH
		27.79	65TH			1.82	65TH
		27.10	60TH			1.76	60TH
****		26.66	55TH	****		1.69	55TH
		26.26	50TH			1.63	50TH
NUMBER OF SUBJECTS =	302	25.79	45TH	NUMBER OF SUBJECTS =	304	1.57	45TH
****		25.16	40TH	****		1.50	40TH
		24.53	35TH			1.44	35TH
		23.91	30TH			1.38	30TH
		23.33	25TH			1.32	25TH
		22.85	20TH			1.25	20TH
		22.51	15TH			1.19	15TH
		22.16	10TH			1.13	10TH
		21.66	5TH			1.06	5TH
		21.39	3RD			1.04	3RD
		21.26	2ND			1.03	2ND
		21.13	1ST			1.01	1ST

AGENCY		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	304	****
2: SHERIFF DEPARTMENT	0	0.0
3: HIGHWAY PATROL	0	0.0
4: PRISON/PEN.	0	0.0
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

DUTY		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	56	18.42
2: TRAFFIC	0	0.0
3: INVESTIGATIONS	2	0.66
4: COMMUNICATIONS	2	0.66
5: ADMINISTRATION	6	1.97
6: OTHER	238	78.29

RANK		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	237	77.96
2: PATROLMAN 3	2	0.66
3: PATROLMAN 2	0	0.0
4: PATROLMAN 1	62	20.39
5: CORPORAL	0	0.0
6: SERGEANT	1	0.33
7: LIEUTENANT	0	0.0
8: MAJOR	0	0.0
9: CAPTAIN	0	0.0
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	2	0.66
16: DEPT SHERIFF	0	0.0
17: PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
0: LEFT BLANK	1	0.33
1: BLACK	41	13.49
2: MEXICAN AMERICAN	0	0.0
3: PUERTO RICAN	14	4.61
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	1	0.33
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	6	1.97
12: EUROPEAN, EAST	23	7.57
13: EUROPEAN, SOUTH	101	32.22
14: EUROPEAN, WEST	113	37.17
15: OTHER	4	1.32
16: WHITE AMERICAN	0	0.0
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	147	48.36
NO	157	51.64

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 304		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	279	91.78
LEFT	23	7.57
AMBIDEXTROUS	2	0.66

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

DETROIT
N=80

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG			LB
WEIGHT	80	83.31	183.66	10.72	23.64	57.	--	116.	126.00 --255.00
		MM	IN	MM	IN	MM			IN
HEIGHT	80	1787.14	70.36	48.09	1.89	1685.	--	1897.	66.34 -- 74.68
FUNCTIONAL REACH	80	817.43	32.18	34.53	1.36	735.	--	895.	28.94 -- 35.24
CHEST BREADTH	80	340.21	13.39	24.80	0.98	281.	--	399.	11.06 -- 15.71
CHEST CIRCUMFERENCE	79	1007.11	39.65	76.82	3.02	824.	--	1169.	32.44 -- 46.02
WAIST CIRCUMFERENCE	79	894.42	35.21	72.36	2.85	743.	--	1050.	29.25 -- 41.34
WAIST FRONT	80	416.85	16.41	23.52	0.93	365.	--	474.	14.37 -- 18.66
HEAD CIRCUMFERENCE	80	576.16	22.68	15.22	0.60	540.	--	624.	21.26 -- 24.57
HAND CIRCUMFERENCE	80	214.79	8.46	10.22	0.40	194.	--	239.	7.64 -- 9.41
SHOULDER HEIGHT SITTING	80	609.58	24.00	30.06	1.18	557.	--	677.	21.93 -- 26.65
SITTING HEIGHT	80	927.15	36.50	31.46	1.24	860.	--	1006.	33.86 -- 39.61
KNEE HEIGHT SITTING	80	566.94	22.32	22.29	0.88	516.	--	628.	20.31 -- 24.72
BUTTOCK KNEE LENGTH	79	621.06	24.45	22.69	0.89	575.	--	698.	22.64 -- 27.48
SHOULDER BREADTH	80	491.85	19.36	30.45	1.20	406.	--	555.	15.98 -- 21.85
HEAD LENGTH	80	197.91	7.79	6.25	0.25	181.	--	212.	7.13 -- 8.35
HEAD BREADTH	80	153.98	6.06	5.57	0.22	140.	--	168.	5.51 -- 6.61
FACE BREADTH	80	142.44	5.61	5.05	0.20	132.	--	156.	5.20 -- 6.14
FACE LENGTH	79	122.03	4.80	5.81	0.23	110.	--	136.	4.33 -- 5.35
LIP LENGTH	80	53.35	2.10	4.46	0.18	43.	--	67.	1.69 -- 2.64
HAND LENGTH	80	196.73	7.75	8.27	0.33	175.	--	215.	6.89 -- 8.46
FOREFINGER LENGTH	80	128.13	5.04	6.39	0.25	113.	--	144.	4.45 -- 5.67
HAND BREADTH	80	89.43	3.52	4.88	0.19	78.	--	105.	3.07 -- 4.13
TRIGGER POSITION	80	74.11	2.92	6.11	0.24	60.	--	91.	2.36 -- 3.58

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	30.56	YEARS		MEAN VALUE	5.44	YEARS	
SE (MEAN)	0.86	47.20	50TH	SE (MEAN)	0.76	25.20	99TH
SD DEVIATION	7.67	46.40	98TH	SD DEVIATION	6.82	22.80	98TH
SE (SD DEV)	0.61	45.90	97TH	SE (SD DEV)	0.54	22.53	97TH
****		45.50	95TH	****		22.00	95TH
		43.30	90TH			19.33	90TH
		42.33	85TH			14.00	85TH
		40.00	80TH			11.50	80TH
SYMMETRY---VFET I =	0.67	39.00	75TH	SYMMETRY---VFET I =	1.48	7.33	75TH
KURTOSIS---VFET II =	2.22	34.00	70TH	KURTOSIS---VFET II =	3.78	5.50	70TH
COEF. OF VARIATION =	25.1%	32.50	65TH	COEF. OF VARIATION =	125.3%	4.00	65TH
		30.67	60TH			3.33	60TH
****		29.60	55TH	****		2.75	55TH
		28.67	50TH			2.25	50TH
NUMBER OF SUBJECTS =	80	27.67	45TH	NUMBER OF SUBJECTS =	80	1.95	45TH
		27.00	40TH			1.84	40TH
****		26.50	35TH	****		1.74	35TH
		26.00	30TH			1.63	30TH
		25.33	25TH			1.53	25TH
		24.50	20TH			1.42	20TH
		23.33	15TH			1.32	15TH
		22.57	10TH			1.21	10TH
		22.00	5TH			1.11	5TH
		21.20	3RD			1.06	3RD
		20.60	2ND			1.04	2ND
		19.80	1ST			1.02	1ST

<u>AGENCY</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	44	55.00
2: SHERIFF DEPARTMENT	36	45.00
3: HIGHWAY PATROL	0	0.0
4: PRISON/PEN.	0	0.0
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	40	50.00
2: TRAFFIC	1	1.25
3: INVESTIGATIONS	2	2.50
4: COMMUNICATIONS	2	2.50
5: ADMINISTRATION	11	13.75
6: OTHER	24	30.00

<u>RANK</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	17	21.25
2: PATROLMAN 3	1	1.25
3: PATROLMAN 2	1	1.25
4: PATROLMAN 1	22	27.50
5: CORPORAL	10	12.50
6: SERGEANT	2	2.50
7: LIEUTENANT	1	1.25
8: MAJOR	0	0.0
9: CAPTAIN	0	0.0
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	2	2.50
16: DEPT SHERIFF	24	30.00
17: PRISON GUARD	0	0.0

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
0: LEFT BLANK	2	2.50
1: BLACK	23	28.75
2: MEXICAN AMERICAN	1	1.25
3: PUERTO RICAN	1	1.25
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	0	0.0
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	4	5.00
12: EUROPEAN, EAST	11	13.75
13: EUROPEAN, SOUTH	5	6.25
14: EUROPEAN, WEST	31	38.75
15: OTHER	1	1.25
16: WHITE AMERICAN	1	1.25
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	54	67.50
NO	26	32.50

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 80		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	77	90.00
LEFT	6	7.50
AMBIDEXTROUS	2	2.50

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

MINNEAPOLIS/ST. PAUL
N=210

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	L8	KG	L8	KG		L8	
WEIGHT	209	86.20	190.04	10.70	23.59	65.	--	131.	144.00 --289.00
		MM	IN	MM	IN	MM		IN	
HEIGHT	209	1787.56	70.38	51.31	2.02	1675.	--	1954.	65.94 -- 76.93
FUNCTIONAL REACH	210	855.95	33.70	39.17	1.54	736.	--	974.	28.98 -- 38.35
CHEST BREAOTH	208	355.51	14.00	25.02	0.98	307.	--	482.	12.09 -- 18.98
CHEST CIRCUMFERENCE	209	1051.76	41.41	72.62	2.86	904.	--	1391.	35.59 -- 54.76
WAIST CIRCUMFERENCE	209	938.20	36.94	85.54	3.37	760.	--	1378.	29.92 -- 54.25
WAIST FRONT	209	416.92	16.41	26.97	1.06	361.	--	533.	14.21 -- 20.98
HEAD CIRCUMFERENCE	210	578.33	22.77	14.89	0.59	539.	--	626.	21.22 -- 24.65
HAND CIRCUMFERENCE	210	219.65	8.65	10.36	0.41	196.	--	278.	7.72 -- 10.94
SHOULDER HEIGHT SITTING	209	621.33	24.46	27.98	1.10	537.	--	709.	21.14 -- 27.91
SITTING HEIGHT	209	926.79	36.49	28.93	1.14	853.	--	1018.	33.58 -- 40.08
KNEE HEIGHT SITTING	209	560.95	22.08	22.24	0.88	507.	--	609.	19.96 -- 23.98
BUTTOCK KNEE LENGTH	209	618.96	24.37	25.34	1.00	561.	--	692.	22.09 -- 27.24
SHOULDER BREAOTH	209	502.64	19.79	27.85	1.10	435.	--	639.	17.13 -- 25.16
HEAD LENGTH	210	198.57	7.82	6.84	0.27	181.	--	221.	7.13 -- 8.70
HEAD BREAOTH	210	156.80	6.17	5.63	0.22	141.	--	176.	5.55 -- 6.93
FACE BREAOTH	210	144.47	5.69	6.21	0.24	126.	--	161.	4.96 -- 6.34
FACE LENGTH	210	122.26	4.81	6.80	0.27	106.	--	143.	4.17 -- 5.63
LIP LENGTH	210	51.14	2.01	4.29	0.17	41.	--	61.	1.61 -- 2.40
HAND LENGTH	209	193.08	7.60	8.47	0.33	168.	--	215.	6.61 -- 8.46
FOREFINGER LENGTH	209	125.39	4.94	7.35	0.29	107.	--	148.	4.21 -- 5.83
HAND BREAOTH	210	90.18	3.55	3.96	0.16	80.	--	103.	3.15 -- 4.06
TRIGGER POSITION	210	66.06	2.60	6.00	0.24	52.	--	86.	2.05 -- 3.39

AGE DISTRIBUTION

MEAN VALUE 37.51
SE(MEAN) 0.67
SD DEVIATION 9.78
SE(SD DEV) 0.48

SYMMETRY---VFETA I = 0.64
KURTOSIS---VFETA II = 2.56
COEFF. OF VARIATION = 26.12

NUMBER OF SUBJECTS = 210

THE PERCENTILES

YEARS
62.45 99TH
60.90 98TH
59.85 97TH
56.75 95TH
52.33 90TH
49.19 85TH
46.86 80TH
45.10 75TH
43.14 70TH
41.31 65TH
39.20 60TH
37.31 55TH
35.77 50TH
34.92 45TH
33.29 40TH
32.23 35TH
31.20 30TH
29.94 25TH
28.67 20TH
27.65 15TH
26.87 10TH
26.17 5TH
25.15 3RD
24.10 2ND
23.05 1ST

LENGTH OF SERVICE

MEAN VALUE 10.51
SE(MEAN) 0.54
SD DEVIATION 7.80
SE(SD DEV) 0.38

SYMMETRY---VFETA I = 0.81
KURTOSIS---VFETA II = 2.86
COEFF. OF VARIATION = 74.22

NUMBER OF SUBJECTS = 210

THE PERCENTILES

YEARS
32.90 99TH
27.90 98TH
26.90 97TH
25.86 95TH
24.00 90TH
19.61 85TH
17.91 80TH
16.83 75TH
14.00 70TH
12.59 65TH
11.50 60TH
10.46 55TH
9.00 50TH
7.75 45TH
6.87 40TH
6.41 35TH
5.93 30TH
5.23 25TH
3.73 20TH
3.03 15TH
1.95 10TH
1.48 5TH
1.29 3RD
1.19 2ND
1.10 1ST

AGENCY		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	190	90.48
2:SHERIFF DEPARTMENT	20	9.52
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	0	0.0
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	113	53.81
2:TRAFFIC	16	7.62
3:INVESTIGATIONS	31	14.76
4:COMMUNICATIONS	3	1.43
5:ADMINISTRATION	27	12.86
6:OTHER	20	9.52

RANK		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	0	0.0
2:PATROLMAN 3	2	0.95
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	153	72.86
5:CORPORAL	1	0.48
6:SERGEANT	25	11.90
7:LIEUTENANT	10	4.76
8:MAJOR	1	0.48
9:CAPTAIN	2	0.95
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	1	0.48
13:CHIEF	3	1.43
14:MARSHAL	0	0.0
15:OTHER	1	0.48
16:DEPT SHERIFF	11	5.24
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	3	1.43
2:MEXICAN AMERICAN	2	0.95
3:PUERTO RICAN	0	0.0
4:CURAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	66	31.43
12:EUROPEAN, EAST	22	10.48
13:EUROPEAN, SOUTH	6	2.86
14:EUROPEAN, WEST	104	49.52
15:OTHER	5	2.38
16:WHITE AMERICAN	1	0.48
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	1	0.48

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	175	83.33
NO	35	16.67

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 210		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	190	90.48
LEFT	13	6.19
AMBIOEXTROUS	7	3.33

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

KANSAS CITY
N=151

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG	LB	KG	LB
WEIGHT	151	84.95	187.29	13.84	30.51	60.	--	135.	132.00 --298.00
HEIGHT	151	MM	IN	MM	IN	MM	IN	MM	IN
FUNCTIONAL REACH	151	1779.39	70.05	57.69	2.27	1554.	--1940.	65.12	-- 76.38
CHEST BREADTH	151	834.11	32.84	42.70	1.68	741.	-- 949.	29.17	-- 37.36
CHEST CIRCUMFERENCE	151	346.70	13.65	27.11	1.07	286.	-- 469.	11.26	-- 18.46
WAIST CIRCUMFERENCE	151	1038.50	40.89	84.51	3.33	842.	--1367.	33.15	-- 53.82
WAIST FRONT	151	934.94	36.81	101.55	4.00	715.	--1220.	28.15	-- 48.03
HEAD CIRCUMFERENCE	151	417.88	16.45	27.55	1.08	368.	-- 495.	14.49	-- 19.49
HAND CIRCUMFERENCE	150	573.07	22.56	14.74	0.58	539.	-- 616.	21.22	-- 24.25
SHOULDER HEIGHT SITTING	151	214.48	8.44	9.41	0.37	194.	-- 248.	7.64	-- 9.76
SITTING HEIGHT	151	620.51	24.43	28.88	1.14	552.	-- 699.	21.73	-- 27.52
KNEE HEIGHT SITTING	150	929.17	36.58	31.49	1.24	848.	--1030.	33.39	-- 40.55
BUTTOCK KNEE LENGTH	151	561.53	22.11	25.80	1.02	506.	-- 633.	19.92	-- 24.92
SHOULDER BREADTH	151	614.50	24.19	27.11	1.07	562.	-- 716.	22.13	-- 28.19
HEAD LENGTH	151	497.97	19.60	33.19	1.31	422.	-- 599.	16.61	-- 23.58
HEAD BREADTH	151	197.51	7.78	6.65	0.26	178.	-- 214.	7.01	-- 8.43
FACE BREADTH	151	154.91	6.10	5.62	0.22	140.	-- 174.	5.51	-- 6.85
FACE LENGTH	151	143.59	5.65	6.11	0.24	130.	-- 160.	5.12	-- 6.30
LIP LENGTH	151	120.81	4.76	6.59	0.26	107.	-- 155.	4.21	-- 6.10
HAND LENGTH	151	50.15	1.97	4.11	0.16	41.	-- 60.	1.61	-- 2.36
FOREFINGER LENGTH	151	193.44	7.62	9.29	0.37	169.	-- 219.	6.65	-- 8.62
HAND BREADTH	151	126.32	4.97	7.64	0.30	109.	-- 147.	4.29	-- 5.79
TRIGGER POSITION	150	89.69	3.53	4.23	0.17	81.	-- 104.	3.19	-- 4.09
	150	69.12	2.72	6.71	0.26	55.	-- 90.	2.17	-- 3.54

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	32.67	YEARS		MEAN VALUE	5.68	YEARS	
SD (MEAN)	0.79	61.25	99TH	SD (MEAN)	0.48	24.50	99TH
SD DEVIATION	2.63	60.00	98TH	SD DEVIATION	5.84	22.50	98TH
SD (SD DEV)	0.56	55.75	97TH	SD (SD DEV)	0.34	21.50	97TH
****		53.50	95TH	****		19.50	95TH
SYMMETRY---VFIA 1 = 1.13		48.33	90TH	SYMMETRY---VFIA 1 = 1.56		16.40	90TH
KURTOSIS---VFIA II = 3.40		45.13	85TH	KURTOSIS---VFIA II = 4.50		12.88	85TH
COEF. OF VARIATION = 29.5%		42.50	80TH	COEF. OF VARIATION = 102.9%		9.67	80TH
****		38.13	75TH	****		7.58	75TH
NUMBER OF SUBJECTS = 150		36.00	70TH	NUMBER OF SUBJECTS = 150		6.33	70TH
****		32.70	65TH	****		4.91	65TH
		31.56	60TH			4.47	60TH
		30.69	55TH			4.03	55TH
		29.80	50TH			3.76	50TH
		29.05	45TH			3.50	45TH
		28.00	40TH			3.24	40TH
		27.32	35TH			2.97	35TH
		26.64	30TH			2.58	30TH
		25.96	25TH			2.18	25TH
		25.38	20TH			1.88	20TH
		24.79	15TH			1.66	15TH
		24.17	10TH			1.44	10TH
		23.08	5TH			1.22	5TH
		22.50	3RD			1.13	3RD
		22.20	2ND			1.09	2ND
		21.50	1ST			1.04	1ST

AGENCY		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	100	66.23
2:SHERIFF DEPARTMENT	14	9.27
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	37	24.50
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	73	48.34
2:TRAFFIC	4	2.65
3:INVESTIGATIONS	1	0.66
4:COMMUNICATIONS	2	1.32
5:ADMINISTRATION	13	8.61
6:OTHER	58	38.41

RANK		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	28	18.54
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	3	1.99
4:PATROLMAN 1	77	50.99
5:CORPORAL	0	0.0
6:SERGEANT	4	2.65
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	1	0.66
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	2	1.32
16:DEPT SHERIFF	0	0.0
17:PRISON GUARD	36	23.84

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	16	10.60
2:MEXICAN AMERICAN	5	3.31
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	2	1.32
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	15	10.60
12:EUROPEAN, EAST	4	2.65
13:EUROPEAN, SOUTH	1	0.66
14:EUROPEAN, WEST	100	66.23
15:OTHER	7	4.64
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	100	66.23
NO	51	33.77

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 151		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	135	89.40
LEFT	7	4.64
AMBIDEXTROUS	9	5.96

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

DENVER
N=178

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG	LB		
WEIGHT	178	81.66	180.02	10.90	24.03	58.	--	111.	128.00 -- 244.00
HEIGHT	178	MM	IN	MM	IN	MM	IN		
FUNCTIONAL REACH	177	1780.15	70.08	56.50	2.22	1670.	--	1946.	65.75 -- 76.61
CHEST BREADTH	177	829.49	32.66	37.49	1.48	725.	--	923.	28.54 -- 36.34
CHEST CIRCUMFERENCE	177	342.11	13.47	26.47	1.04	291.	--	426.	11.46 -- 16.77
WAIST CIRCUMFERENCE	178	1021.33	40.21	76.41	3.01	856.	--	1224.	33.70 -- 48.19
WAIST FRONT	178	896.97	35.31	80.33	3.40	702.	--	1151.	27.64 -- 45.31
HEAD CIRCUMFERENCE	176	412.17	16.23	26.08	1.03	362.	--	512.	14.25 -- 20.16
HAND CIRCUMFERENCE	178	374.01	22.60	13.90	0.55	536.	--	609.	21.10 -- 23.98
SHOULDER HEIGHT SITTING	177	212.48	8.37	9.62	0.38	187.	--	237.	7.36 -- 9.33
SITTING HEIGHT	178	613.80	24.17	28.26	1.11	515.	--	694.	20.28 -- 27.32
KNEE HEIGHT SITTING	177	922.75	36.33	32.99	1.30	840.	--	1018.	33.07 -- 40.08
BUTTUCK KNEE LENGTH	178	561.37	22.10	23.30	0.92	510.	--	633.	20.08 -- 24.92
SHOULDER BREADTH	178	613.46	24.15	24.77	0.98	560.	--	699.	22.05 -- 27.52
HEAD LENGTH	177	496.85	19.56	29.06	1.14	425.	--	590.	16.73 -- 23.23
HEAD BREADTH	178	196.86	7.75	6.32	0.25	180.	--	213.	7.09 -- 8.39
FACE BREADTH	176	153.30	6.04	5.92	0.23	139.	--	168.	5.47 -- 6.61
FACE LENGTH	178	142.73	5.62	5.48	0.22	127.	--	157.	5.00 -- 6.18
LIP LENGTH	178	120.99	4.76	5.56	0.22	109.	--	135.	4.29 -- 5.31
HAND LENGTH	178	52.85	2.08	4.41	0.17	38.	--	62.	1.50 -- 2.44
FOREFINGER LENGTH	178	193.99	7.64	8.07	0.32	172.	--	216.	6.77 -- 8.50
HAND BREADTH	178	125.23	4.93	6.87	0.27	110.	--	154.	4.33 -- 6.06
TRIGGER POSITION	178	89.50	3.52	3.90	0.15	80.	--	99.	3.15 -- 3.90
	177	69.48	2.74	6.78	0.27	53.	--	91.	2.09 -- 3.58

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	29.80	YEARS		MEAN VALUE	3.50	YEARS	
SE (MEAN)	0.47	50.12	99TH	SE (MEAN)	0.29	21.28	99TH
SD DEVIATION	0.19	45.46	98TH	SD DEVIATION	3.79	17.56	98TH
SE (SD DEV)	0.33	44.07	97TH	SE (SD DEV)	0.20	13.61	97TH
****		43.56	95TH	****		11.40	95TH
		39.10	90TH			8.16	90TH
		36.73	85TH			6.91	85TH
SYMMETRY---VETA I =	0.95	34.51	80TH	SYMMETRY---VETA I =	2.50	5.96	80TH
KURTOSIS---VETA II =	3.60	33.61	75TH	KURTOSIS---VETA II =	10.97	5.10	75TH
COEF. OF VARIATION =	20.7%	32.77	70TH	COEF. OF VARIATION =	100.2%	4.68	70TH
****		31.68	65TH	****		4.33	65TH
		30.66	60TH			3.93	60TH
		30.03	55TH			3.22	55TH
		29.23	50TH			2.60	50TH
NUMBER OF SUBJECTS =	177	28.51	45TH	NUMBER OF SUBJECTS =	172	2.03	45TH
****		27.82	40TH	****		1.89	40TH
		27.03	35TH			1.76	35TH
		26.53	30TH			1.67	30TH
		26.12	25TH			1.56	25TH
		24.86	20TH			1.45	20TH
		24.20	15TH			1.34	15TH
		23.21	10TH			1.22	10TH
		22.23	5TH			1.11	5TH
		21.83	3RD			1.07	3RD
		21.59	2ND			1.04	2ND
		21.29	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	33	52.25
2:SHERIFF DEPARTMENT	33	18.54
3:HIGHWAY PATROL	28	15.73
4:PRISON/PEN.	24	13.48
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	79	44.38
2:TRAFFIC	7	3.93
3:INVESTIGATIONS	0	0.0
4:COMMUNICATIONS	2	1.12
5:ADMINISTRATION	1	0.56
6:OTHER	39	50.00

RANK		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	53	32.98
2:PATROLMAN 3	12	6.74
3:PATROLMAN 2	4	2.22
4:PATROLMAN 1	50	33.71
5:CORPORAL	4	2.22
6:SERGEANT	4	2.22
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIT CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	5	2.31
16:DEPT SHERIFF	31	17.42
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
0:LEFT BLANK	2	1.12
1:BLACK	16	8.99
2:MEXICAN AMERICAN	21	11.80
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	1	0.56
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	21	11.80
12:EUROPEAN, EAST	4	2.22
13:EUROPEAN, SOUTH	10	5.62
14:EUROPEAN, WEST	96	53.93
15:OTHER	7	3.93
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	119	69.82
NO	59	33.15

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 170		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	142	79.78
LEFT	21	11.80
AMBIDEXTROUS	15	8.43

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

HELENA/BUTTE
N=106

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	106	84.83	187.03	12.61	27.81	57. -- 133.	125.00 -- 294.00
		MM	IN	MM	IN	MM	IN
HEIGHT	106	1779.71	70.07	62.01	2.44	1559. -- 1936.	61.38 -- 76.22
FUNCTIONAL REACH	106	850.31	33.48	43.15	1.70	752. -- 968.	29.61 -- 38.11
CHEST BREADTH	106	352.82	13.89	26.99	1.06	283. -- 435.	11.14 -- 17.13
CHEST CIRCUMFERENCE	106	1047.08	41.22	82.75	3.26	874. -- 1322.	34.41 -- 52.05
WAIST CIRCUMFERENCE	106	951.60	37.46	107.66	4.24	692. -- 1292.	27.24 -- 50.87
WAIST FRONT	106	420.08	16.54	26.65	1.05	351. -- 492.	13.82 -- 19.37
HEAD CIRCUMFERENCE	106	575.83	22.67	17.88	0.70	529. -- 617.	20.83 -- 24.29
HAND CIRCUMFERENCE	106	217.91	8.58	9.41	0.37	194. -- 240.	7.64 -- 9.45
SHOULDER HEIGHT SITTING	106	638.12	25.12	28.70	1.13	566. -- 716.	22.28 -- 28.19
SITTING HEIGHT	106	929.32	36.59	33.82	1.33	830. -- 1014.	32.68 -- 39.92
KNEE HEIGHT SITTING	106	543.96	21.42	28.01	1.10	468. -- 631.	18.43 -- 24.84
BUTTOCK KNEE LENGTH	106	610.71	24.04	28.71	1.13	528. -- 684.	20.79 -- 26.93
SHOULDER BREADTH	106	495.53	19.51	29.33	1.15	428. -- 578.	16.85 -- 22.76
HEAD LENGTH	106	198.26	7.81	7.80	0.31	181. -- 218.	7.13 -- 8.58
HEAD BREADTH	106	157.22	6.19	6.16	0.24	142. -- 175.	5.59 -- 6.89
FACE BREADTH	106	145.78	5.74	6.36	0.25	131. -- 167.	5.16 -- 6.57
FACE LENGTH	106	122.06	4.81	6.29	0.25	109. -- 137.	4.29 -- 5.39
LIP LENGTH	106	54.22	2.13	4.13	0.16	42. -- 64.	1.65 -- 2.52
HAND LENGTH	106	186.66	7.35	9.49	0.37	151. -- 207.	5.94 -- 8.15
FOREFINGER LENGTH	106	122.88	4.84	7.47	0.29	106. -- 142.	4.17 -- 5.59
HAND BREADTH	106	90.48	3.56	3.83	0.15	82. -- 99.	3.23 -- 3.90
TRIGGER POSITION	106	64.80	2.55	6.39	0.25	54. -- 80.	2.13 -- 3.15

AGE DISTRIBUTION

MEAN VALUE 35.86
SF(MEAN) 1.12
SD DEVIATION 11.50
SE(SD DEV) 0.79

SYMMETRY---VETA I = 0.77
KURTOSIS---VETA II = 2.63
COEF. OF VARIATION = 32.1%

NUMBER OF SUBJECTS = 106

THE PERCENTILES

YEARS
64.47 99TH
62.88 98TH
61.91 97TH
60.70 95TH
54.70 90TH
49.37 85TH
47.20 80TH
43.50 75TH
41.73 70TH
39.45 65TH
37.40 60TH
34.15 55TH
32.60 50TH
32.07 45TH
30.80 40TH
30.14 35TH
28.27 30TH
26.83 25TH
25.53 20TH
24.70 15TH
23.92 10TH
22.65 5TH
21.79 3RD
21.53 2ND
21.26 1ST

LENGTH OF SERVICE

MEAN VALUE 5.76
SF(MEAN) 0.53
SD DEVIATION 5.44
SE(SD DEV) 0.37

SYMMETRY---VETA I = 1.28
KURTOSIS---VETA II = 4.08
COEF. OF VARIATION = 94.3%

NUMBER OF SUBJECTS = 106

THE PERCENTILES

YEARS
22.94 99TH
21.88 98TH
20.82 97TH
17.70 95TH
14.20 90TH
11.78 85TH
10.63 80TH
9.63 75TH
8.07 70TH
6.84 65TH
6.09 60TH
4.81 55TH
4.22 50TH
3.67 45TH
3.14 40TH
2.57 35TH
1.99 30TH
1.83 25TH
1.66 20TH
1.50 15TH
1.33 10TH
1.17 5TH
1.10 3RD
1.07 2ND
1.03 1ST

AGENCY		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	38	35.85
2:SHERIFF DEPARTMENT	11	10.38
3:HIGHWAY PATROL	8	7.55
4:PRISON/PFN.	49	46.23
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	37	34.91
2:TRAFFIC	2	1.89
3:INVESTIGATIONS	3	2.83
4:COMMUNICATIONS	2	1.89
5:ADMINISTRATION	19	17.92
6:OTHER	43	40.57

RANK		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	1	0.94
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	33	31.13
5:CORPORAL	0	0.0
6:SERGEANT	16	15.09
7:LIEUTENANT	2	1.89
8:MAJOR	0	0.0
9:CAPTAIN	1	0.94
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	1	0.94
12:DEPUTY CHIEF	0	0.0
13:CHIEF	1	0.94
14:MARSHAL	0	0.0
15:OTHER	7	6.60
16:DEPT SHERIFF	11	10.38
17:PRISON GUARD	33	31.13

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	0	0.0
2:MEXICAN AMERICAN	1	0.94
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:FAST INDIAN	0	0.0
11:EUROPEAN, NORTH	24	22.64
12:EUROPEAN, EAST	4	3.77
13:EUROPEAN, SOUTH	1	0.94
14:EUROPEAN, WEST	73	68.87
15:OTHER	0	0.0
16:WHITE AMERICAN	3	2.83
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	77	72.64
NO	29	27.36

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 106		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	95	89.62
LEFT	7	6.60
AMBIDEXTROUS	4	3.77

LAW ENFORCEMENT OFFICER BDDY MEASUREMENT SURVEY STATISTICS

SPOKANE

N=51

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	L8	KG	L8	KG	L8
WEIGHT	51	87.12	192.08	11.85	26.12	63. -- 126.	139.00 -- 278.00
		MM	IN	MM	IN	MM	IN
HEIGHT	51	1804.12	71.03	46.47	1.83	1708. -- 1918.	67.24 -- 75.51
FUNCTIONAL REACH	51	861.35	33.91	35.93	1.41	773. -- 933.	30.43 -- 36.73
CHEST BREADTH	51	342.08	13.47	26.50	1.04	294. -- 424.	11.57 -- 16.69
CHEST CIRCUMFERENCE	51	1053.39	41.47	85.58	3.37	781. -- 1238.	30.75 -- 48.74
WAIST CIRCUMFERENCE	51	928.61	36.56	96.42	3.80	750. -- 1184.	29.53 -- 46.61
WAIST FRONT	51	413.00	16.26	26.06	1.03	361. -- 482.	14.21 -- 18.98
HEAD CIRCUMFERENCE	51	577.94	22.75	17.14	0.67	534. -- 614.	21.02 -- 24.17
HAND CIRCUMFERENCE	51	221.59	8.72	9.83	0.39	189. -- 247.	7.44 -- 9.72
SHOULDER HEIGHT SITTING	51	622.37	24.50	28.11	1.11	555. -- 689.	21.85 -- 27.13
SITTING HEIGHT	51	933.10	36.74	28.26	1.11	872. -- 1005.	34.33 -- 39.57
KNEE HEIGHT SITTING	51	557.53	21.95	22.18	0.87	520. -- 607.	20.47 -- 23.90
BUTTOCK KNEE LENGTH	51	626.75	24.67	25.03	0.99	557. -- 677.	21.93 -- 26.65
SHOULDER BREADTH	51	500.18	19.69	36.80	1.45	441. -- 685.	17.36 -- 26.97
HEAD LENGTH	51	200.59	7.90	7.00	0.28	178. -- 217.	7.01 -- 8.54
HEAD BREADTH	51	158.39	6.24	6.56	0.26	142. -- 175.	5.59 -- 6.89
FACE BREADTH	51	145.47	5.73	7.00	0.28	128. -- 161.	5.04 -- 6.34
FACE LENGTH	51	122.16	4.81	7.18	0.28	107. -- 143.	4.21 -- 5.63
LIP LENGTH	51	53.59	2.11	3.38	0.13	47. -- 64.	1.85 -- 2.52
HAND LENGTH	51	190.31	7.49	8.68	0.34	173. -- 208.	6.81 -- 8.19
MIDDLE FINGER LENGTH	51	125.27	4.93	8.03	0.32	110. -- 142.	4.33 -- 5.59
HAND BREADTH	51	90.69	3.57	4.60	0.18	78. -- 100.	3.07 -- 3.94
TRIGGER POSITION	51	65.84	2.59	6.55	0.26	54. -- 79.	2.13 -- 3.11

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES ;	
MEAN VALUE	34.69	YEARS		MEAN VALUE	8.37	YEARS	
SE(MEAN)	1.26	54.49	99TH	SE(MEAN)	1.07	27.49	99TH
SD DEVIATION	9.03	51.99	98TH	SD DEVIATION	7.64	24.99	98TH
SE(SD DEV)	0.89	51.74	97TH	SE(SD DEV)	0.76	24.82	97TH
****		51.23	95TH	****		24.48	95TH
		48.97	90TH			23.45	90TH
		48.12	85TH			17.68	85TH
		45.80	80TH			14.80	80TH
SYMMETRY---VETA I =	0.54	41.25	75TH	SYMMETRY---VETA I =	0.90	12.75	75TH
KURTOSIS---VETA II =	2.00	39.23	70TH	KURTOSIS---VETA II =	2.71	11.85	70TH
CDEF. OF VARIATION =	26.0%	38.08	65TH	CDEF. OF VARIATION =	91.2%	10.58	65TH
		36.87	60TH			9.53	60TH
		36.02	55TH			7.53	55TH
****		32.25	50TH	****		6.50	50TH
		31.32	45TH			5.48	45TH
NUMBER OF SUBJECTS =	51	29.40	40TH	NUMBER OF SUBJECTS =	51	4.68	40TH
		28.46	35TH			4.17	35TH
****		27.90	30TH	****		2.15	30TH
		27.54	25TH			1.85	25TH
		27.17	20TH			1.68	20TH
		26.60	15TH			1.51	15TH
		26.02	10TH			1.34	10TH
		25.18	5TH			1.17	5TH
		22.53	3RD			1.10	3RD
		22.02	2ND			1.07	2ND
		20.51	1ST			1.03	1ST

<u>AGENCY</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	13	25.49
2: SHERIFF DEPARTMENT	38	74.51
3: HIGHWAY PATROL	0	0.0
4: PRISON/PEN.	0	0.0
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
0: LEFT BLANK	1	1.96
1: PATROL	28	54.90
2: TRAFFIC	3	5.88
3: INVESTIGATIONS	14	27.45
4: COMMUNICATIONS	1	1.96
5: ADMINISTRATION	3	5.88
6: OTHER	1	1.96

<u>RANK</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	1	1.96
2: PATROLMAN 3	4	7.84
3: PATROLMAN 2	0	0.0
4: PATROLMAN 1	20	39.22
5: CORPORAL	4	7.84
6: SERGEANT	11	21.57
7: LIEUTENANT	1	1.96
8: MAJOR	0	0.0
9: CAPTAIN	2	3.92
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	3	5.88
16: DEPT SHERIFF	3	5.88
17: PRISON GUARD	2	3.92

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	0	0.0
2: MEXICAN AMERICAN	0	0.0
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	0	0.0
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	10	19.61
12: EUROPEAN, EAST	2	3.92
13: EUROPEAN, SOUTH	1	1.96
14: EUROPEAN, WEST	35	68.63
15: OTHER	1	1.96
16: WHITE AMERICAN	2	3.92
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	37	72.55
NO	14	27.45

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 51		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	42	82.35
LEFT	2	3.92
AMBIDEXTROUS	7	13.73

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

PORTLAND
N=117

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	117	85.42	188.32	11.93	26.30	61. -- 125.	135.00 -- 275.00
		MM	IN	MM	IN	MM	IN
HEIGHT	117	1794.04	70.63	60.05	2.36	1680. -- 1976.	66.14 -- 77.80
FUNCTIONAL REACH	117	822.47	32.38	39.02	1.54	733. -- 952.	28.86 -- 37.48
CHEST BREAOTH	117	346.97	13.66	24.99	0.98	296. -- 424.	11.65 -- 16.69
CHEST CIRCUMFERENCE	117	1030.66	40.58	70.90	2.79	888. -- 1240.	34.96 -- 48.82
WAIST CIRCUMFERENCE	117	909.33	35.80	87.31	3.44	696. -- 1144.	27.40 -- 45.04
WAIST FRONT	117	411.28	16.19	25.88	1.02	304. -- 477.	11.97 -- 18.78
HEAD CIRCUMFERENCE	117	577.80	22.75	16.85	0.66	535. -- 627.	21.06 -- 24.68
HAND CIRCUMFERENCE	116	214.33	8.44	9.64	0.38	190. -- 242.	7.48 -- 9.53
SHOULDER HEIGHT SITTING	117	621.39	24.46	29.79	1.17	559. -- 717.	22.01 -- 28.23
SITTING HEIGHT	117	936.25	36.86	32.10	1.26	869. -- 1014.	34.21 -- 39.92
KNEE HEIGHT SITTING	113	566.96	22.32	25.64	1.01	491. -- 638.	19.33 -- 25.12
BUTTOCK KNEE LENGTH	117	615.00	24.21	30.19	1.19	533. -- 700.	20.98 -- 27.56
SHOULDER BREADTH	117	499.50	19.67	27.14	1.07	432. -- 568.	17.01 -- 22.36
HEAD LENGTH	117	199.52	7.86	7.44	0.29	179. -- 220.	7.05 -- 8.66
HEAD BREAOTH	117	155.46	6.12	5.21	0.21	145. -- 172.	5.71 -- 6.77
FACE BREAOTH	117	143.60	5.65	5.79	0.23	129. -- 158.	5.08 -- 6.22
FACE LENGTH	117	122.62	4.83	6.36	0.25	110. -- 149.	4.33 -- 5.87
LIP LENGTH	117	50.70	2.00	4.34	0.17	42. -- 63.	1.65 -- 2.48
HAND LENGTH	117	193.71	7.63	9.31	0.37	173. -- 223.	6.81 -- 8.78
FOREFINGER LENGTH	117	127.51	5.02	7.36	0.29	113. -- 147.	4.45 -- 5.79
HAND BREADTH	117	89.48	3.52	3.82	0.15	80. -- 100.	3.15 -- 3.94
TRIGGER POSITION	117	66.17	2.61	5.63	0.22	54. -- 88.	2.13 -- 3.46

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	33.72	YEARS		MEAN VALUE	8.18	YEARS	
SE(MEAN)	0.77	55.42	99TH	SE(MEAN)	0.68	27.92	99TH
SD DEVIATION	8.38	54.89	98TH	SD DEVIATION	7.32	27.33	98TH
SE(SD DEV)	0.55	54.50	97TH	SE(SD DEV)	0.48	26.75	97TH
****		53.15	95TH	****		24.15	95TH
		48.15	90TH			20.58	90TH
		44.45	85TH			16.73	85TH
SYMMETRY---VFETA I =	0.99	39.65	80TH	SYMMETRY---VFETA I =	1.07	14.43	80TH
KURTOSIS---VFETA II =	3.19	37.92	75TH	KURTOSIS---VFETA II =	3.24	13.46	75TH
COEF. OF VARIATION =	24.98	36.38	70TH	COEF. OF VARIATION =	89.4%	11.65	70TH
		35.01	65TH			10.03	65TH
		34.17	60TH			8.05	60TH
****		33.07	55TH	****		6.76	55TH
		31.92	50TH			5.95	50TH
NUMBER OF SUBJECTS =	117	30.96	45TH	NUMBER OF SUBJECTS =	117	5.42	45TH
		30.38	40TH			4.76	40TH
****		29.74	35TH	****		3.74	35TH
		29.01	30TH			3.01	30TH
		28.18	25TH			2.64	25TH
		27.23	20TH			2.28	20TH
		26.44	15TH			1.92	15TH
		25.42	10TH			1.62	10TH
		24.17	5TH			1.31	5TH
		23.50	3RD			1.18	3RD
		23.11	2ND			1.12	2ND
		22.17	1ST			1.06	1ST

AGENCY		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	39	33.33
2:SHERIFF DEPARTMENT	36	30.77
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	0	0.0
5:STATE POLICE	42	35.90
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	60	51.28
2:TRAFFIC	8	6.84
3:INVESTIGATIONS	30	25.64
4:COMMUNICATIONS	2	1.71
5:ADMINISTRATION	10	8.55
6:OTHER	7	5.98

RANK		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	7	5.98
2:PATROLMAN 3	6	5.13
3:PATROLMAN 2	3	2.56
4:PATROLMAN 1	26	22.22
5:CORPORAL	2	1.71
6:SERGEANT	24	20.51
7:1 LIEUTENANT	5	4.27
8:MAJOR	0	0.0
9:CAPTAIN	2	1.71
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	1	0.85
14:MARSHAL	0	0.0
15:OTHER	21	17.95
16:DEPT SHERIFF	20	17.09
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
0:LEFT BLANK	2	1.71
1:BLACK	2	1.71
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	1	0.85
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	2	1.71
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	20	17.09
12:EUROPEAN, EAST	2	1.71
13:EUROPEAN, SOUTH	3	2.56
14:EUROPEAN, WEST	77	65.81
15:OTHER	7	5.98
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	1	0.85

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	78	66.67
NO	39	33.33

HANDINESS FOR WEAPON USAGE		
TOTAL NUMBER= 117		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	101	86.32
LEFT	8	6.84
AMBIDEXTROUS	3	2.56

APPENDIX B-4: ETHNIC BACKGROUNDS

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

BLACK
N=281

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	281	84.00	185.20	13.64	30.08	57. -- 144.	126.00 -- 318.00
		MM	IN	MM	IN	MM	IN
HEIGHT	281	1783.07	70.20	57.91	2.28	1631. -- 2007.	64.21 -- 79.02
FUNCTIONAL REACH	281	845.37	33.28	44.47	1.75	735. -- 1002.	28.94 -- 39.45
CHEST BREADTH	281	339.69	13.37	25.20	0.99	273. -- 429.	10.75 -- 16.89
CHEST CIRCUMFERENCE	281	902.24	39.06	79.34	3.12	790. -- 1315.	31.10 -- 51.77
WAIST CIRCUMFERENCE	280	972.71	34.36	103.47	4.07	675. -- 1284.	26.57 -- 50.55
WAIST FRONT	281	405.88	15.98	25.07	0.99	342. -- 488.	13.46 -- 19.21
HEAD CIRCUMFERENCE	272	579.04	22.80	18.49	0.66	535. -- 624.	21.06 -- 24.57
HAND CIRCUMFERENCE	278	215.44	8.49	10.88	0.43	185. -- 250.	7.28 -- 9.84
SHOULDER HEIGHT SITTING	279	592.09	23.31	29.63	1.17	517. -- 677.	20.35 -- 26.65
SITTING HEIGHT	281	891.03	35.12	35.22	1.39	789. -- 995.	31.06 -- 39.17
KNEE HEIGHT SITTING	279	573.27	22.57	24.31	0.96	518. -- 653.	20.39 -- 25.71
BUITOCK KNEE LENGTH	280	636.69	25.07	28.19	1.11	573. -- 724.	22.56 -- 28.50
SHOULDER BREADTH	280	495.31	19.50	30.18	1.19	406. -- 596.	15.98 -- 23.46
HEAD LENGTH	281	199.19	7.84	7.33	0.29	176. -- 220.	6.93 -- 8.66
HEAD BREADTH	281	153.44	6.04	5.27	0.21	140. -- 167.	5.51 -- 6.57
FACE BREADTH	281	142.14	5.60	5.62	0.22	130. -- 160.	5.12 -- 6.30
FACE LENGTH	280	122.75	4.83	6.25	0.25	103. -- 141.	4.06 -- 5.55
LIP LENGTH	281	54.19	2.13	4.13	0.16	43. -- 67.	1.69 -- 2.64
HAND LENGTH	260	201.44	7.93	9.01	0.35	174. -- 232.	6.85 -- 9.13
FOREFINGER LENGTH	281	128.23	5.05	7.71	0.30	107. -- 152.	4.21 -- 5.98
HAND BREADTH	281	90.91	3.56	4.43	0.17	80. -- 105.	3.15 -- 4.13
TRIGGER POSITION	270	69.67	2.74	7.61	0.30	52. -- 89.	2.05 -- 3.50

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	29.57	MEAN VALUE	3.20
SE(MEAN)	0.44	SE(MEAN)	0.29
SD DEVIATION	7.32	SD DEVIATION	4.82
SE(SD DEV)	0.31	SE(SD DEV)	0.20
****		****	
SYMMETRY---VETA I = 1.21		SYMMETRY---VETA I = 3.38	
KURTOSIS---VETA II = 4.45		KURTOSIS---VETA II = 16.35	
COEF. OF VARIATION = 24.7%		COEF. OF VARIATION = 150.8%	
****		****	
NUMBER OF SUBJECTS = 281		NUMBER OF SUBJECTS = 279	
****		****	
	YEARS		YEARS
	99TH		99TH
	98TH		98TH
	97TH		97TH
	95TH		95TH
	90TH		90TH
	85TH		85TH
	80TH		80TH
	75TH		75TH
	70TH		70TH
	65TH		65TH
	60TH		60TH
	55TH		55TH
	50TH		50TH
	45TH		45TH
	40TH		40TH
	35TH		35TH
	30TH		30TH
	25TH		25TH
	20TH		20TH
	15TH		15TH
	10TH		10TH
	5TH		5TH
	3RD		3RD
	2ND		2ND
	1ST		1ST

AGENCY		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	218	77.58
2:SHERIFF DEPARTMENT	37	13.17
3:HIGHWAY PATROL	9	3.20
4:PRISON/PEN.	16	5.69
5:STATE POLICE	1	0.36
6:OTHER	0	0.0

OUTY		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
0:LEFT BLANK	1	0.36
1:PATROL	76	27.05
2:TRAFFIC	4	1.42
3:INVESTIGATIONS	16	5.69
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	16	5.69
6:OTHER	168	59.79

RANK		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	130	46.26
2:PATROLMAN 3	6	2.14
3:PATROLMAN 2	2	0.71
4:PATROLMAN 1	88	31.32
5:CORPORAL	0	0.0
6:SERGEANT	3	1.07
7:LIEUTENANT	3	1.07
8:MAJOR	0	0.0
9:CAPTAIN	2	0.71
10:INSPECTOR	1	0.36
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	1	0.36
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	6	2.14
16:DEPT SHERIFF	33	11.74
17:PRISON GUARD	0	2.14

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	281	****
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	0	0.0
13:EUROPEAN, SOUTH	0	0.0
14:EUROPEAN, WEST	0	0.0
15:OTHER	0	0.0
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
LEFT BLANK	1	0.36
YES	163	58.01
NO	117	41.64

HANDIENESS FOR WEAPON USAGE		
TOTAL NUMBER= 281		
	NUMBER	PER CENT
LEFT BLANK	1	0.36
RIGHT	259	92.17
LEFT	15	5.34
AMBIDEXTROUS	6	2.14

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

MEXICAN AMERICAN

N= 98

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	L8	KG	L8	KG	L8
WEIGHT	98	82.09	180.97	12.85	28.33	57. -- 131.	125.00 -- 289.00
		MM	IN	MM	IN	MM	IN
HEIGHT	98	1734.99	68.31	44.35	1.75	1626. -- 1860.	64.02 -- 73.23
FUNCTIONAL REACH	98	823.31	32.41	42.86	1.69	705. -- 927.	27.76 -- 36.50
CHEST BREADTH	97	351.72	13.85	31.16	1.23	294. -- 482.	11.57 -- 18.98
CHEST CIRCUMFERENCE	98	1042.82	41.06	94.87	3.73	836. -- 1391.	32.91 -- 54.76
WAIST CIRCUMFERENCE	98	923.72	36.37	112.74	4.44	718. -- 1378.	28.27 -- 54.25
WAIST FRONT	97	413.25	16.27	29.79	1.17	341. -- 533.	13.43 -- 20.98
HEAD CIRCUMFERENCE	98	570.79	22.47	16.04	0.63	536. -- 628.	21.10 -- 24.72
HAND CIRCUMFERENCE	97	211.02	8.31	9.14	0.36	188. -- 237.	7.40 -- 9.33
SHOULDER HEIGHT SITTING	98	605.94	23.86	26.86	1.06	515. -- 663.	20.28 -- 26.10
SITTING HEIGHT	97	903.91	35.59	29.43	1.16	835. -- 972.	32.87 -- 38.27
KNEE HEIGHT SITTING	98	543.81	21.41	20.92	0.82	493. -- 590.	19.41 -- 23.23
BUTTOCK KNEE LENGTH	97	599.87	23.62	21.33	0.84	557. -- 656.	21.93 -- 25.83
SHOULDER BREADTH	98	499.55	19.67	30.31	1.19	431. -- 639.	16.97 -- 25.16
HEAD LENGTH	98	193.24	7.61	6.74	0.27	178. -- 210.	7.01 -- 8.27
HEAD BREADTH	98	155.71	6.13	5.48	0.22	141. -- 174.	5.55 -- 6.85
FACE BREADTH	98	145.73	5.74	5.85	0.23	128. -- 162.	5.04 -- 6.38
FACE LENGTH	98	122.22	4.81	5.66	0.22	105. -- 138.	4.13 -- 5.43
LIP LENGTH	98	51.98	2.05	4.00	0.16	44. -- 61.	1.73 -- 2.40
HAND LENGTH	98	190.72	7.51	7.07	0.28	176. -- 210.	6.93 -- 8.27
FOREFINGER LENGTH	98	121.56	4.79	5.79	0.23	106. -- 137.	4.17 -- 5.39
HAND BREADTH	96	88.11	3.47	4.05	0.16	79. -- 99.	3.11 -- 3.90
TRIGGER POSITION	87	66.36	2.61	6.76	0.27	53. -- 91.	2.09 -- 3.58

AGE DISTRIBUTION

MEAN VALUE 29.55
SE(MEAN) 0.76
SD DEVIATION 7.48
SE(SD DEV) 0.53

SYMMETRY---VETA I = 2.08
KURTOSIS---VETA II = 8.38
COEF. OF VARIATION = 25.3%

NUMBER OF SUBJECTS = 98

THE PERCENTILES

YEARS

64.02 99TH
56.04 98TH
53.06 97TH
46.10 95TH
38.73 90TH
35.86 85TH
33.85 80TH
32.25 75TH
31.12 70TH
29.95 65TH
29.13 60TH
27.91 55TH
27.50 50TH
27.09 45TH
26.78 40TH
26.49 35TH
26.20 30TH
25.79 25TH
25.09 20TH
24.46 15TH
23.30 10TH
22.90 5TH
20.98 3RD
20.65 2ND
20.33 1ST

LENGTH OF SERVICE

MEAN VALUE 3.14
SE(MEAN) 0.48
SD DEVIATION 4.79
SE(SD DEV) 0.34

SYMMETRY---VETA I = 3.44
KURTOSIS---VETA II = 15.18
COEF. OF VARIATION = 152.3%

NUMBER OF SUBJECTS = 98

THE PERCENTILES

YEARS

26.02 99TH
25.04 98TH
24.06 97TH
12.10 95TH
6.84 90TH
5.86 85TH
4.90 80TH
4.08 75TH
3.12 70TH
2.39 65TH
1.96 60TH
1.83 55TH
1.80 50TH
1.72 45TH
1.64 40TH
1.56 35TH
1.48 30TH
1.40 25TH
1.32 20TH
1.24 15TH
1.16 10TH
1.08 5TH
1.05 3RD
1.03 2ND
1.02 1ST

AGENCY

TOTAL NUMBER= 98

	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	65	66.33
2: SHERIFF DEPARTMENT	15	15.31
3: HIGHWAY PATROL	1	1.02
4: PRISON/PEN.	17	17.35
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

DUTY

TOTAL NUMBER= 98

	NUMBER	PER CENT
0: LEFT BLANK	2	2.04
1: PATROL	25	25.51
2: TRAFFIC	2	2.04
3: INVESTIGATIONS	0	0.0
4: COMMUNICATIONS	0	0.0
5: ADMINISTRATION	8	8.16
6: OTHER	61	62.24

RANK

TOTAL NUMBER= 98

	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	34	34.69
2: PATROLMAN 3	3	3.06
3: PATROLMAN 2	2	2.04
4: PATROLMAN 1	26	26.53
5: CORPORAL	0	0.0
6: SERGEANT	5	5.10
7: LIEUTENANT	1	1.02
8: MAJOR	0	0.0
9: CAPTAIN	0	0.0
10: INSPECTOR	0	0.0
11: ASST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	2	2.04
16: DEPT SHERIFF	16	16.33
17: PRISON GUARD	9	9.18

PREDOMINANT ETHNIC BACKGROUND

TOTAL NUMBER= 98

	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	0	0.0
2: MEXICAN AMERICAN	98	*****
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	0	0.0
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	0	0.0
12: EUROPEAN, EAST	0	0.0
13: EUROPEAN, SOUTH	0	0.0
14: EUROPEAN, WEST	0	0.0
15: OTHER	0	0.0
16: WHITE AMERICAN	0	0.0
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE

TOTAL NUMBER= 98

	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	68	69.39
NO	30	30.61

HANDEDNESS FOR WEAPON USAGE

TOTAL NUMBER= 98

	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	87	88.78
LEFT	7	7.14
AMBIDEXTROUS	4	4.08

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

PUERTO RICAN/CUBAN
N= 27

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	27	79.78	175.89	10.37	22.86	60. -- 98.	132.00 -- 215.00
HEIGHT	27	MM 1745.11	IN 68.71	MM 40.02	IN 1.58	MM 1682. -- 1839.	IN 66.22 -- 72.40
FUNCTIONAL REACH	27	804.96	31.69	35.20	1.39	746. -- 886.	29.37 -- 34.88
CHEST BREAOTH	27	340.89	13.42	18.32	0.72	295. -- 374.	11.61 -- 14.72
CHEST CIRCUMFERENCE	27	1000.19	39.38	61.82	2.43	904. -- 1134.	35.59 -- 44.65
WAIST CIRCUMFERENCE	27	885.11	34.85	65.94	2.60	774. -- 1043.	30.47 -- 41.06
WAIST FRONT	27	403.93	15.90	16.18	0.64	375. -- 445.	14.76 -- 17.52
HEAD CIRCUMFERENCE	27	570.70	22.47	18.00	0.71	542. -- 609.	21.34 -- 23.98
HANO CIRCUMFERENCE	27	207.67	8.18	10.12	0.40	183. -- 230.	7.20 -- 9.06
SHOULDER HEIGHT SITTING	26	600.88	23.66	19.72	0.78	567. -- 638.	22.32 -- 25.12
SITTING HEIGHT	27	903.22	35.56	25.39	1.00	854. -- 957.	33.62 -- 37.68
KNEE HEIGHT SITTING	27	551.19	21.70	18.04	0.71	520. -- 584.	20.47 -- 22.99
BUTTOCK KNEE LENGTH	27	602.44	23.72	23.22	0.91	566. -- 659.	22.28 -- 25.94
SHOULDER BREAOTH	27	486.85	19.17	24.70	0.97	415. -- 534.	16.34 -- 21.02
HEAD LENGTH	27	196.74	7.75	8.14	0.32	178. -- 216.	7.01 -- 8.50
HEAD BREAOTH	27	154.85	6.10	4.45	0.18	148. -- 162.	5.83 -- 6.38
FACE BREAOTH	27	141.59	5.57	7.15	0.28	124. -- 161.	4.88 -- 6.34
FACE LENGTH	27	120.78	4.76	5.75	0.23	110. -- 132.	4.33 -- 5.20
LIP LENGTH	27	50.30	1.98	4.31	0.17	43. -- 58.	1.69 -- 2.28
HAND LENGTH	27	192.78	7.59	7.08	0.28	178. -- 206.	7.01 -- 8.11
FOREFINGER LENGTH	27	127.48	5.02	8.22	0.32	105. -- 143.	4.13 -- 5.63
HAND BREAOTH	27	88.56	3.49	3.88	0.15	77. -- 97.	3.03 -- 3.82
TRIGGER POSITION	27	67.93	2.67	5.81	0.23	55. -- 80.	2.17 -- 3.15

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	27.62	MEAN VALUE	1.59
SE(MEAN)	0.72	SE(MEAN)	0.29
SD DEVIATION	3.67	SD DEVIATION	1.52
SE(SD DEV)	0.51	SE(SD DEV)	0.21
****		****	
SYMMETRY---VETA I =	0.45	SYMMETRY---VETA I =	2.66
KURTOSIS---VETA II =	3.22	KURTOSIS---VETA II =	8.76
COEF. OF VARIATION =	13.34	COEF. OF VARIATION =	95.54
****		****	
NUMBER OF SUBJECTS =	26	NUMBER OF SUBJECTS =	27
****		****	
	YEARS		YEARS
	37.74 99TH		7.73 99TH
	37.48 98TH		7.46 98TH
	37.22 97TH		7.19 97TH
	34.70 95TH		6.92 95TH
	33.40 90TH		4.30 90TH
	31.55 85TH		2.48 85TH
	30.90 80TH		1.98 80TH
	30.25 75TH		1.92 75TH
	29.73 70TH		1.86 70TH
	29.30 65TH		1.80 65TH
	28.80 60TH		1.74 60TH
	28.15 55TH		1.66 55TH
	27.75 50TH		1.61 50TH
	27.42 45TH		1.55 45TH
	27.10 40TH		1.49 40TH
	26.55 35TH		1.43 35TH
	25.90 30TH		1.37 30TH
	25.25 25TH		1.31 25TH
	24.80 20TH		1.25 20TH
	24.47 15TH		1.18 15TH
	24.15 10TH		1.12 10TH
	23.30 5TH		1.06 5TH
	20.76 3RD		1.04 3RD
	20.52 2ND		1.02 2ND
	20.26 1ST		1.01 1ST

<u>AGENCY</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	23	85.19
2:SHERIFF DEPARTMENT	2	7.41
3:HIGHWAY PATROL	0	0.0
4:PRISON/PEN.	2	7.41
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	4	14.81
2:TRAFFIC	1	3.70
3:INVESTIGATIONS	0	0.0
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	0	0.0
6:OTHER	22	81.48

<u>RANK</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	20	74.07
2:PATROLMAN 3	0	0.0
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	5	18.52
5:CORPORAL	0	0.0
6:SERGEANT	0	0.0
7:LIEUTENANT	0	0.0
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIT CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	0	0.0
16:DEPT SHERIFF	0	0.0
17:PRISON GUARD	2	7.41

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	0	0.0
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	10	37.04
4:CUBAN	11	40.74
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:CAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	0	0.0
13:EUROPEAN, SOUTH	0	0.0
14:EUROPEAN, WEST	0	0.0
15:OTHER	0	0.0
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	10	37.04
NO	17	62.96

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 27		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	24	88.89
LEFT	2	7.41
AMBIDEXTROUS	1	3.70

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

AMERICAN INDIAN
N= 42

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	L8	KG	L8	KG	L8
WEIGHT	42	85.23	187.90	16.85	37.15	56. -- 128.	124.00 -- 282.00
		MM	IN	MM	IN	MM	IN
HEIGHT	42	1767.00	69.57	63.67	2.51	1653. -- 1997.	65.08 -- 78.62
FUNCTIONAL REACH	42	821.60	32.35	41.32	1.63	727. -- 935.	28.62 -- 36.81
CHEST BREAOTH	42	357.93	14.09	36.91	1.45	288. -- 466.	11.34 -- 18.35
CHEST CIRCUMFERENCE	42	1048.48	41.28	114.58	4.51	806. -- 1334.	31.73 -- 52.52
WAIST CIRCUMFERENCE	42	933.79	36.76	139.16	5.48	682. -- 1332.	26.85 -- 52.44
WAIST FRONT	42	416.36	16.39	33.54	1.32	341. -- 483.	13.43 -- 19.02
HEAD CIRCUMFERENCE	42	575.05	22.64	17.54	0.69	538. -- 610.	21.18 -- 24.02
HAND CIRCUMFERENCE	42	214.33	8.44	12.15	0.48	189. -- 250.	7.44 -- 9.84
SHOULDER HEIGHT SITTING	42	620.48	24.43	33.33	1.31	520. -- 678.	20.47 -- 26.69
SITTING HEIGHT	42	917.86	36.14	41.29	1.63	795. -- 987.	31.30 -- 38.86
KNEE HEIGHT SITTING	42	552.81	21.76	24.54	0.97	503. -- 635.	19.80 -- 25.00
BUTTOCK KNEE LENGTH	42	810.38	24.03	30.76	1.21	536. -- 715.	21.10 -- 28.15
SHOULDER BREAOTH	42	498.69	19.63	42.99	1.69	415. -- 604.	16.34 -- 23.78
HEAD LENGTH	42	197.79	7.79	7.55	0.30	179. -- 210.	7.05 -- 8.27
HEAD BREAOTH	42	156.38	6.16	5.57	0.22	142. -- 165.	5.59 -- 6.50
FACE BREAOTH	42	145.50	5.73	7.07	0.28	134. -- 162.	5.28 -- 6.38
FACE LENGTH	42	120.10	4.73	5.23	0.21	106. -- 130.	4.17 -- 5.12
LIP LENGTH	42	51.52	2.03	2.74	0.11	45. -- 56.	1.77 -- 2.20
HAND LENGTH	42	191.76	7.55	8.50	0.33	169. -- 203.	6.65 -- 7.99
FOREFINGER LENGTH	42	126.43	4.98	7.43	0.29	109. -- 140.	4.29 -- 5.51
HAND BREAOTH	42	89.60	3.53	5.60	0.22	80. -- 105.	3.15 -- 4.13
TRIGGER POSITION	42	68.00	2.68	7.96	0.31	52. -- 86.	2.05 -- 3.39

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
		YEARS				YEARS	
MEAN VALUE	30.02	57.58	99TH	MEAN VALUE	4.24	19.58	99TH
SE(MEAN)	1.14	57.16	98TH	SE(MEAN)	0.72	19.16	98TH
SD DEVIATION	7.39	44.74	97TH	SD DEVIATION	4.69	17.74	97TH
SE(SD DEV)	0.81	39.95	95TH	SE(SD DEV)	0.51	14.90	95TH
		38.90	90TH			11.90	90TH
		37.70	85TH			10.57	85TH
****		36.53	80TH	****		8.60	80TH
		35.75	75TH			5.75	75TH
SYMMETRY---VETA I = 1.18		34.40	70TH	SYMMETRY---VETA I = 1.61		4.30	70TH
KURTOSIS---VETA II = 5.19		33.43	65TH	KURTOSIS---VETA II = 4.65		4.10	65TH
COEF. OF VARIATION = 24.66		32.20	60TH	COEF. OF VARIATION = 110.66		3.40	60TH
		30.05	55TH			2.85	55TH
		28.50	50TH			2.50	50TH
****		27.97	45TH	****		2.15	45TH
		27.45	40TH			1.93	40TH
NUMBER OF SUBJECTS = 42		26.70	35TH	NUMBER OF SUBJECTS = 42		1.82	35TH
		25.55	30TH			1.70	30TH
****		24.75	25TH	****		1.58	25TH
		23.85	20TH			1.47	20TH
		23.32	15TH			1.35	15TH
		22.60	10TH			1.23	10TH
		21.55	5TH			1.12	5TH
		21.13	3RD			1.07	3RD
		19.84	2ND			1.05	2ND
		19.42	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	21	50.00
2: SHERIFF DEPARTMENT	13	30.95
3: HIGHWAY PATROL	2	4.76
4: PRISON/PEN.	5	11.90
5: STATE POLICE	1	2.38
6: OTHER	0	0.0

DUTY		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	19	45.24
2: TRAFFIC	0	0.0
3: INVESTIGATIONS	0	0.0
4: COMMUNICATIONS	0	0.0
5: ADMINISTRATION	1	2.38
6: OTHER	22	52.38

RANK		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	10	23.81
2: PATROLMAN 3	1	2.38
3: PATROLMAN 2	0	0.0
4: PATROLMAN 1	13	30.95
5: CORPORAL	0	0.0
6: SERGEANT	4	9.52
7: LIEUTENANT	3	7.14
8: MAJOR	0	0.0
9: CAPTAIN	0	0.0
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	0	0.0
15: OTHER	2	4.76
16: DEPT SHERIFF	6	14.29
17: PRISON GUARD	3	7.14

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	0	0.0
2: MEXICAN AMERICAN	0	0.0
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	42	*****
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	0	0.0
12: EUROPEAN, EAST	0	0.0
13: EUROPEAN, SOUTH	0	0.0
14: EUROPEAN, WEST	0	0.0
15: OTHER	0	0.0
16: WHITE AMERICAN	0	0.0
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	30	71.43
NO	12	28.57

HANDINESS FOR WEAPON USAGE		
TOTAL NUMBER= 42		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	34	80.95
LEFT	6	14.29
AMBIDEXTROUS	2	4.76

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

EUROPEAN, NORTHERN
N=241

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	240	84.00	185.19	11.57	25.52	57. -- 140.	125.00 -- 308.00
		MM	IN	MM	IN	MM	IN
HEIGHT	240	1790.03	70.47	61.32	2.41	1638. -- 2022.	64.49 -- 79.61
FUNCTIONAL REACH	240	837.83	32.99	43.98	1.73	732. -- 974.	28.82 -- 38.35
CHEST BREADTH	240	347.96	13.70	25.48	1.00	294. -- 464.	11.57 -- 18.27
CHEST CIRCUMFERENCE	240	1033.76	40.70	75.37	2.97	851. -- 1322.	33.50 -- 52.05
WAIST CIRCUMFERENCE	240	913.42	35.96	91.28	3.59	716. -- 1220.	28.19 -- 48.03
WAIST FRONT	239	413.82	16.29	25.75	1.01	350. -- 521.	13.78 -- 20.51
HEAD CIRCUMFERENCE	241	575.48	22.66	15.29	0.60	536. -- 626.	21.10 -- 24.65
HAND CIRCUMFERENCE	241	215.93	8.50	9.55	0.38	187. -- 241.	7.36 -- 9.49
SHOULDER HEIGHT SITTING	240	622.03	24.49	31.36	1.23	549. -- 719.	21.61 -- 28.31
SITTING HEIGHT	240	930.73	36.64	32.61	1.28	853. -- 1028.	33.58 -- 40.47
KNEE HEIGHT SITTING	239	559.84	22.04	25.78	1.02	492. -- 630.	19.37 -- 24.80
BUTTOCK KNEE LENGTH	240	615.96	24.25	27.73	1.09	544. -- 718.	21.42 -- 28.27
SHOULDER BREADTH	240	497.49	19.59	28.32	1.11	428. -- 685.	16.85 -- 26.97
HEAD LENGTH	240	198.07	7.80	6.26	0.25	178. -- 220.	7.01 -- 8.66
HEAD BREADTH	241	154.71	6.09	5.84	0.23	140. -- 176.	5.51 -- 6.93
FACE BREADTH	241	142.97	5.63	5.94	0.23	128. -- 160.	5.04 -- 6.30
FACE LENGTH	240	120.55	4.75	6.50	0.26	105. -- 142.	4.13 -- 5.59
LIP LENGTH	241	51.10	2.01	4.21	0.17	42. -- 67.	1.65 -- 2.64
HAND LENGTH	241	191.62	7.54	9.24	0.36	165. -- 217.	6.50 -- 8.54
FOREFINGER LENGTH	241	125.56	4.94	7.55	0.30	107. -- 150.	4.21 -- 5.91
HAND BREADTH	241	89.98	3.54	3.97	0.16	78. -- 100.	3.07 -- 3.94
TRIGGER POSITION	240	67.33	2.65	6.72	0.26	52. -- 91.	2.05 -- 3.58

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	31.90	MEAN VALUE	5.95
SE(MEAN)	0.57	SE(MEAN)	0.38
SD DEVIATION	8.90	SD DEVIATION	5.96
SE(SD DEV)	0.41	SE(SD DEV)	0.27
****		****	
SYMMETRY---VETA I = 1.22		SYMMETRY---VETA I = 1.46	
KURTOSIS---VETA II = 4.19		KURTOSIS---VETA II = 4.96	
COEF. OF VARIATION = 27.9%		COEF. OF VARIATION = 100.2%	
****		****	
NUMBER OF SUBJECTS = 240		NUMBER OF SUBJECTS = 240	
****		****	
	YEARS		YEARS
	61.60 99TH		25.60 99TH
	59.20 98TH		23.60 98TH
	54.60 97TH		22.60 97TH
	51.25 95TH		19.33 95TH
	43.88 90TH		14.50 90TH
	41.71 85TH		12.60 85TH
	39.20 80TH		11.00 80TH
	37.17 75TH		9.25 75TH
	35.57 70TH		8.00 70TH
	33.00 65TH		7.00 65TH
	31.83 60TH		6.14 60TH
	30.86 55TH		5.17 55TH
	30.00 50TH		4.29 50TH
	28.62 45TH		3.50 45TH
	27.83 40TH		2.81 40TH
	27.33 35TH		2.24 35TH
	26.80 30TH		1.91 30TH
	26.20 25TH		1.76 25TH
	25.27 20TH		1.61 20TH
	24.18 15TH		1.46 15TH
	23.29 10TH		1.30 10TH
	22.27 5TH		1.15 5TH
	21.74 3RD		1.09 3RD
	21.40 2ND		1.06 2ND
	21.00 1ST		1.03 1ST

<u>AGENCY</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	151	62.66
2: SHERIFF DEPARTMENT	52	21.58
3: HIGHWAY PATROL	8	3.32
4: PRISON/PEN.	22	9.13
5: STATE POLICE	8	3.32
6: OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: PATROL	116	48.13
2: TRAFFIC	8	3.32
3: INVESTIGATIONS	20	8.30
4: COMMUNICATIONS	1	0.41
5: ADMINISTRATION	17	7.05
6: OTHER	79	32.78

<u>RANK</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	48	19.92
2: PATROLMAN 3	1	0.41
3: PATROLMAN 2	1	0.41
4: PATROLMAN 1	106	43.98
5: CORPORAL	3	1.24
6: SERGEANT	25	10.37
7: LIEUTENANT	5	2.07
8: MAJOR	1	0.41
9: CAPTAIN	2	0.83
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	0	0.0
14: MARSHAL	1	0.41
15: OTHER	9	3.73
16: DEPT SHERIFF	25	10.37
17: PRISON GUARD	14	5.81

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	0	0.0
2: MEXICAN AMERICAN	0	0.0
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	0	0.0
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	241	****
12: EUROPEAN, EAST	0	0.0
13: EUROPEAN, SOUTH	0	0.0
14: EUROPEAN, WEST	0	0.0
15: OTHER	0	0.0
16: WHITE AMERICAN	0	0.0
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	162	67.22
NO	79	32.78

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 241		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	208	86.31
LEFT	21	8.71
AMBIDEXTROUS	12	4.98

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

EUROPEAN, EASTERN
N=141

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	141	82.40	181.66	10.66	23.49	59. -- 111.130.00	--245.00
		MM	IN	MM	IN	MM	IN
HEIGHT	141	1782.40	70.17	51.95	2.05	1632. --1923.	64.25 -- 75.71
FUNCTIONAL REACH	141	828.26	32.61	39.63	1.56	705. -- 957.	27.76 -- 37.68
CHEST BREADTH	140	341.29	13.44	24.09	0.95	283. -- 419.	11.14 -- 16.50
CHEST CIRCUMFERENCE	141	1010.72	39.79	69.59	2.74	858. --1219.	33.78 -- 47.99
WAIST CIRCUMFERENCE	141	893.80	35.19	82.42	3.24	700. --1150.	27.56 -- 45.28
WAIST FRONT	141	410.62	16.17	27.26	1.07	342. -- 488.	13.46 -- 19.21
HEAD CIRCUMFERENCE	141	571.74	22.51	15.06	0.59	534. -- 616.	21.02 -- 24.25
HAND CIRCUMFERENCE	141	213.98	8.42	11.57	0.46	188. -- 278.	7.40 -- 10.94
SHOULDER HEIGHT SITTING	140	616.74	24.28	26.35	1.04	528. -- 677.	20.79 -- 26.65
SITTING HEIGHT	140	924.26	36.39	30.28	1.19	826. --1006.	32.52 -- 39.61
KNEE HEIGHT SITTING	141	556.89	21.92	22.73	0.89	501. -- 612.	19.72 -- 24.09
BUTTOCK KNEE LENGTH	141	612.43	24.11	25.04	0.99	547. -- 692.	21.54 -- 27.24
SHOULDER BREADTH	141	492.64	19.40	27.17	1.07	415. -- 563.	16.34 -- 22.17
HEAD LENGTH	141	196.82	7.75	6.26	0.25	182. -- 216.	7.17 -- 8.50
HEAD BREADTH	141	154.94	6.10	6.13	0.24	141. -- 174.	5.55 -- 6.85
FACE BREADTH	141	142.55	5.61	6.18	0.24	125. -- 161.	4.92 -- 6.34
FACE LENGTH	141	120.84	4.76	5.76	0.23	106. -- 134.	4.17 -- 5.28
LIP LENGTH	141	51.06	2.01	4.36	0.17	39. -- 60.	1.54 -- 2.36
HAND LENGTH	141	192.43	7.58	8.11	0.32	168. -- 211.	6.61 -- 8.31
FOREFINGER LENGTH	141	125.21	4.93	7.75	0.31	106. -- 149.	4.17 -- 5.87
HAND BREADTH	141	89.52	3.52	4.34	0.17	80. -- 103.	3.15 -- 4.06
TRIGGER POSITION	139	67.74	2.67	6.92	0.27	54. -- 86.	2.13 -- 3.39

AGE DISTRIBUTION		THE PERCENTILES		LENGTH OF SERVICE		THE PERCENTILES	
MEAN VALUE	29.14	YEARS		MEAN VALUE	4.21	YEARS	
SE(MEAN)	0.68	55.60	99TH	SE(MEAN)	0.48	26.59	99TH
SD DEVIATION	3.09	54.20	98TH	SD DEVIATION	5.73	25.59	98TH
SE(SD DEV)	0.45	50.80	97TH	SE(SD DEV)	0.34	22.77	97TH
****		48.50	95TH	****		17.98	95TH
		42.50	90TH			12.48	90TH
		36.33	85TH			9.43	85TH
SYMMETRY---VETA I = 1.53		33.33	80TH	SYMMETRY---VETA I = 2.23		6.96	80TH
KURTOSIS---VETA II = 5.28		31.75	75TH	KURTOSIS---VETA II = 7.66		5.63	75TH
COEF. OF VARIATION = 27.8%		30.60	70TH	COEF. OF VARIATION = 136.14		4.53	70TH
		29.86	65TH			3.44	65TH
		29.00	60TH			2.37	60TH
****		28.00	55TH	****		1.95	55TH
		26.93	50TH			1.86	50TH
NUMBER OF SUBJECTS = 140		26.47	45TH	NUMBER OF SUBJECTS = 141		1.77	45TH
****		26.00	40TH	****		1.69	40TH
		25.30	35TH			1.60	35TH
		24.67	30TH			1.52	30TH
		24.06	25TH			1.43	25TH
		23.45	20TH			1.34	20TH
		22.86	15TH			1.26	15TH
		22.36	10TH			1.17	10TH
		21.75	5TH			1.09	5TH
		21.40	3RD			1.05	3RD
		21.22	2ND			1.03	2ND
		21.05	1ST			1.02	1ST

AGENCY		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	113	80.14
2:SHERIFF DEPARTMENT	20	14.18
3:HIGHWAY PATROL	5	3.55
4:PRISON/PEN.	3	2.13
5:STATE POLICE	0	0.0
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	53	37.59
2:TRAFFIC	6	4.26
3:INVESTIGATIONS	8	5.67
4:COMMUNICATIONS	0	0.0
5:ADMINISTRATION	8	5.67
6:OTHER	66	46.81

RANK		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	62	43.97
2:PATROLMAN 3	2	1.42
3:PATROLMAN 2	0	0.0
4:PATROLMAN 1	32	22.88
5:SERGEANT	4	2.84
6:SERGEANT	4	2.84
7:LIEUTENANT	1	0.71
8:MAJOR	0	0.0
9:CAPTAIN	2	1.42
10:INSPECTOR	0	0.0
11:ASSIST CHIEF	0	0.0
12:DEPUTY CHIEF	1	0.71
13:CHIEF	1	0.71
14:MARSHAL	0	0.0
15:OTHER	0	0.0
16:DEPT SHERIFF	9	6.38
17:PRISON GUARD	3	2.13

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	0	0.0
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:COBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	141	****
13:EUROPEAN, SOUTH	0	0.0
14:EUROPEAN, WEST	0	0.0
15:OTHER	0	0.0
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	85	60.28
NO	56	39.72

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 141		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	116	82.27
LEFT	17	12.06
AMBIDEXTROUS	8	5.67

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

EUROPEAN, SOUTHERN
N=205

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	205	80.97	178.52	9.97	21.97	60. -- 108.	133.00 -- 238.00
		MM	IN	MM	IN	MM	IN
HEIGHT	205	1756.86	69.17	49.81	1.96	1658. -- 1956.	65.28 -- 77.01
FUNCTIONAL REACH	205	810.63	31.91	36.49	1.44	720. -- 916.	28.35 -- 36.06
CHEST BREADTH	205	343.43	13.52	24.00	0.94	294. -- 410.	11.57 -- 16.14
CHEST CIRCUMFERENCE	205	1008.56	39.71	66.67	2.62	851. -- 1171.	33.50 -- 46.10
WAIST CIRCUMFERENCE	205	892.39	35.13	77.15	3.04	733. -- 1124.	28.86 -- 44.25
WAIST FRONT	204	407.74	16.05	22.47	0.88	356. -- 478.	14.02 -- 18.82
HEAD CIRCUMFERENCE	205	571.44	22.50	15.35	0.60	532. -- 616.	20.94 -- 24.25
HAND CIRCUMFERENCE	205	212.22	8.36	9.21	0.36	189. -- 237.	7.44 -- 9.33
SHOULDER HEIGHT SITTING	205	607.39	23.91	26.28	1.03	526. -- 673.	20.71 -- 26.50
SITTING HEIGHT	205	912.86	35.94	28.67	1.13	814. -- 1012.	32.05 -- 39.84
KNEE HEIGHT SITTING	205	550.78	21.68	22.37	0.88	504. -- 617.	19.84 -- 24.29
BUTTOCK KNEE LENGTH	205	604.52	23.80	22.78	0.90	556. -- 675.	21.89 -- 26.57
SHOULDER BREADTH	205	490.08	19.29	26.55	1.05	420. -- 569.	16.54 -- 22.40
HEAD LENGTH	205	196.93	7.75	6.75	0.27	165. -- 216.	6.50 -- 8.50
HEAD BREADTH	205	153.57	6.05	5.80	0.23	139. -- 173.	5.47 -- 6.81
FACE BREADTH	205	142.30	5.60	6.03	0.24	125. -- 161.	4.92 -- 6.34
FACE LENGTH	204	122.06	4.81	6.13	0.24	103. -- 144.	4.06 -- 5.67
LIP LENGTH	205	50.40	1.98	4.03	0.16	37. -- 65.	1.46 -- 2.56
HAND LENGTH	205	191.99	7.56	7.89	0.31	173. -- 218.	6.81 -- 8.58
FOREFINGER LENGTH	205	126.15	4.97	7.12	0.28	110. -- 148.	4.33 -- 5.83
HAND BREADTH	205	89.50	3.52	4.27	0.17	78. -- 105.	3.07 -- 4.13
TRIGGER POSITION	203	67.29	2.65	6.55	0.26	53. -- 89.	2.09 -- 3.50

AGE DISTRIBUTION

MEAN VALUE 27.99
SE(MEAN) 0.48
SD DEVIATION 6.80
SE(SD DEV) 0.34

SYMMETRY---VETA I = 1.65
KURTOSIS---VETA II = 5.93
COEF. OF VARIATION = 24.3%

NUMBER OF SUBJECTS = 205

THE PERCENTILES

YEARS
53.97 99TH
45.97 98TH
44.97 97TH
41.96 95TH
38.90 90TH
35.14 85TH
32.10 80TH
30.46 75TH
29.31 70TH
28.50 65TH
27.81 60TH
27.21 55TH
26.73 50TH
26.31 45TH
25.76 40TH
25.00 35TH
24.08 30TH
23.51 25TH
22.90 20TH
22.58 15TH
22.17 10TH
21.56 5TH
21.29 3RD
21.15 2ND
21.00 1ST

LENGTH OF SERVICE

MEAN VALUE 3.20
SE(MEAN) 0.32
SD DEVIATION 4.55
SE(SD DEV) 0.23

SYMMETRY---VETA I = 2.43
KURTOSIS---VETA II = 8.59
COEF. OF VARIATION = 142.2%

NUMBER OF SUBJECTS = 203

THE PERCENTILES

YEARS
20.97 99TH
18.94 98TH
17.46 97TH
14.43 95TH
10.90 90TH
6.51 85TH
5.31 80TH
3.75 75TH
1.99 70TH
1.92 65TH
1.85 60TH
1.78 55TH
1.71 50TH
1.64 45TH
1.57 40TH
1.50 35TH
1.43 30TH
1.35 25TH
1.26 20TH
1.21 15TH
1.14 10TH
1.07 5TH
1.04 3RD
1.03 2ND
1.01 1ST

AGENCY		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	172	83.90
2:SHERIFF DEPARTMENT	26	12.68
3:HIGHWAY PATROL	3	1.46
4:PRISON/PEN.	3	1.46
5:STATE POLICE	1	0.49
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:PATROL	54	26.34
2:TRAFFIC	4	1.95
3:INVESTIGATIONS	7	3.41
4:COMMUNICATIONS	2	0.98
5:ADMINISTRATION	10	4.88
6:OTHER	128	62.44

RANK		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	125	60.98
2:PATROLMAN 3	4	1.95
3:PATROLMAN 2	1	0.49
4:PATROLMAN 1	47	22.93
5:CORPORAL	1	0.49
6:SERGEANT	9	4.39
7:LIEUTENANT	1	0.49
8:MAJOR	0	0.0
9:CAPTAIN	0	0.0
10:INSPECTOR	0	0.0
11:ASSIT CHIEF	0	0.0
12:DEPUTY CHIEF	0	0.0
13:CHIEF	0	0.0
14:MARSHAL	0	0.0
15:OTHER	4	1.95
16:DEPT SHERIFF	13	6.34
17:PRISON GUARD	0	0.0

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	0	0.0
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	0	0.0
13:EUROPEAN, SOUTH	205	****
14:EUROPEAN, WEST	0	0.0
15:OTHER	0	0.0
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	112	54.63
NO	93	45.37

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 205		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
RIGHT	190	92.68
LEFT	11	5.37
AMBIDEXTROUS	4	1.95

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

EUROPEAN, WESTERN
N=1493

	NUMBER	MEAN		SD DEVIATION		RANGE	
		KG	LB	KG	LB	KG	LB
WEIGHT	1492	83.22	183.47	11.92	26.28	56. -- 144.	124.00 -- 318.00
		MM	IN	MM	IN	MM	IN
HEIGHT	1491	1783.41	70.21	56.32	2.22	1559. -- 1982.	61.38 -- 78.03
FUNCTIONAL REACH	1489	830.58	32.70	41.52	1.63	705. -- 1012.	27.76 -- 39.84
CHEST BREAOTH	1490	346.36	13.64	25.99	1.02	271. -- 469.	10.67 -- 18.46
CHEST CIRCUMFERENCE	1491	1023.34	40.29	77.82	3.06	810. -- 1367.	31.89 -- 53.82
WAIST CIRCUMFERENCE	1491	910.20	35.83	94.36	3.71	679. -- 1292.	26.73 -- 50.87
WAIST FRONT	1489	414.19	16.31	27.12	1.07	304. -- 590.	11.97 -- 23.23
HEAD CIRCUMFERENCE	1488	574.54	22.62	15.41	0.61	528. -- 631.	20.79 -- 24.84
HANO CIRCUMFERENCE	1489	214.11	8.43	10.17	0.40	180. -- 248.	7.09 -- 9.76
SHOULOER HEIGHT SITTING	1493	618.44	24.35	28.20	1.11	526. -- 717.	20.71 -- 28.23
SITTING HEIGHT	1489	924.92	36.41	31.82	1.25	828. -- 1025.	32.60 -- 40.35
KNEE HEIGHT SITTING	1489	557.55	21.95	24.83	0.98	468. -- 650.	18.43 -- 25.59
BUTTOCK KNEE LENGTH	1492	613.50	24.15	25.87	1.02	528. -- 700.	20.79 -- 27.56
SHOULDER BREAOTH	1490	493.30	19.42	29.13	1.15	408. -- 644.	16.06 -- 25.35
HEAD LENGTH	1493	198.20	7.80	6.96	0.27	175. -- 225.	6.89 -- 8.86
HEAD BREAOTH	1493	154.83	6.10	5.73	0.23	134. -- 175.	5.28 -- 6.89
FACE BREAOTH	1493	143.03	5.63	6.14	0.24	120. -- 167.	4.72 -- 6.57
FACE LENGTH	1492	120.81	4.76	6.56	0.26	104. -- 155.	4.09 -- 6.10
LIP LENGTH	1492	51.14	2.01	4.42	0.17	38. -- 68.	1.50 -- 2.68
HAND LENGTH	1490	192.19	7.57	8.72	0.34	151. -- 232.	5.94 -- 9.13
FOREFINGER LENGTH	1488	125.56	4.94	7.41	0.29	106. -- 154.	4.17 -- 6.06
HANO BREAOTH	1489	89.71	3.53	4.17	0.16	75. -- 104.	2.95 -- 4.09
TRIGGER POSITION	1463	67.41	2.65	6.53	0.26	52. -- 90.	2.05 -- 3.54

AGE DISTRIBUTION		LENGTH OF SERVICE	
THE PERCENTILES		THE PERCENTILES	
MEAN VALUE	31.10	MEAN VALUE	5.10
SE(MEAN)	0.24	SE(MEAN)	0.16
SD DEVIATION	9.33	SD DEVIATION	6.22
SE(SD DEV)	0.17	SE(SD DEV)	0.11
****		****	
SYMMETRY---VETA I = 1.24	39.01	SYMMETRY---VETA I = 1.74	9.35
KURTOSIS---VETA II = 3.90	35.79	KURTOSIS---VETA II = 5.30	7.09
COEF. OF VARIATION = 29.9%	33.44	COEF. OF VARIATION = 120.5%	5.84
****		****	
NUMBER OF SUBJECTS = 1479	27.10	NUMBER OF SUBJECTS = 1479	1.86
****		****	

81.05	95TH	26.44	95TH
56.36	98TH	24.64	98TH
54.09	97TH	21.86	97TH
51.10	95TH	20.00	95TH
46.34	90TH	16.01	90TH
43.28	85TH	12.45	85TH
39.01	80TH	9.35	80TH
35.79	75TH	7.09	75TH
33.44	70TH	5.84	70TH
31.70	65TH	4.91	65TH
30.42	60TH	4.16	60TH
29.43	55TH	3.39	55TH
28.55	50TH	2.59	50TH
27.76	45TH	1.97	45TH
27.10	40TH	1.86	40TH
26.43	35TH	1.75	35TH
25.74	30TH	1.65	30TH
25.00	25TH	1.54	25TH
24.30	20TH	1.43	20TH
23.43	15TH	1.32	15TH
22.55	10TH	1.22	10TH
21.68	5TH	1.11	5TH
21.23	3RD	1.06	3RD
21.08	2ND	1.04	2ND
20.42	1ST	1.02	1ST

AGENCY		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:POLICE DEPARTMENT	919	61.29
2:SHERIFF DEPARTMENT	308	20.63
3:HIGHWAY PATROL	98	6.56
4:PRISON/PEN.	149	9.71
5:STATE POLICE	27	1.81
6:OTHER	0	0.0

DUTY		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
0:LEFT BLANK	2	0.13
1:PATROL	504	39.12
2:TRAFFIC	80	7.36
3:INVESTIGATIONS	86	5.76
4:COMMUNICATIONS	14	0.94
5:ADMINISTRATION	78	5.22
6:OTHER	649	43.47

RANK		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:ACADEMY	472	31.61
2:PATROLMAN 3	33	2.21
3:PATROLMAN 2	18	1.21
4:PATROLMAN 1	495	33.15
5:CORPORAL	18	1.21
6:SERGEANT	90	6.03
7:LIEUTENANT	25	1.67
8:MAJOR	2	0.13
9:CAPTAIN	8	0.54
10:INSPECTOR	0	0.0
11:ASSIT CHIEF	1	0.07
12:DEPUTY CHIEF	0	0.0
13:CHIEF	4	0.27
14:MARSHAL	1	0.07
15:OTHER	52	3.48
16:DEPT SHERIFF	163	10.92
17:PRISON GUARD	111	7.43

PREDOMINANT ETHNIC BACKGROUND		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
0:LEFT BLANK	0	0.0
1:BLACK	0	0.0
2:MEXICAN AMERICAN	0	0.0
3:PUERTO RICAN	0	0.0
4:CUBAN	0	0.0
5:HAWAIIAN	0	0.0
6:CHINESE	0	0.0
7:JAPANESE	0	0.0
8:OTHER ORIENTAL	0	0.0
9:AMERICAN INDIAN	0	0.0
10:EAST INDIAN	0	0.0
11:EUROPEAN, NORTH	0	0.0
12:EUROPEAN, EAST	0	0.0
13:EUROPEAN, SOUTH	0	0.0
14:EUROPEAN, WEST	1493	****
15:OTHER	0	0.0
16:WHITE AMERICAN	0	0.0
17:AMERICAN	0	0.0
18:CANADIAN	0	0.0
19:SOUTH AMERICAN	0	0.0

PRIOR MILITARY SERVICE		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
LEFT BLANK	1	0.07
YES	978	65.51
NO	514	34.43

HANDEDNESS FOR WEAPON USAGE		
TOTAL NUMBER= 1493		
	NUMBER	PER CENT
LEFT BLANK	1	0.07
RIGHT	1326	88.81
LEFT	166	11.12
AMBIDEXTROUS	58	3.88

LAW ENFORCEMENT OFFICER BODY MEASUREMENT SURVEY STATISTICS

WHITE AMERICAN
N=305

	NUMBER	MEAN		SD DEVIATION		RANGE			
		KG	LB	KG	LB	KG	LB		
WEIGHT	305	84.84	187.04	11.04	24.35	59.	-- 124.	131.00	--274.00
		MM	IN	MM	IN	MM	IN		
HEIGHT	305	1793.95	70.63	58.27	2.29	1630.	--2067.	64.17	-- 81.38
FUNCTIONAL REACH	304	824.38	32.46	35.90	1.41	711.	-- 921.	27.99	-- 36.26
CHEST BREAOTH	303	352.21	13.87	25.97	1.02	273.	-- 430.	10.75	-- 16.93
CHEST CIRCUMFERENCE	305	1031.04	40.59	76.17	3.00	781.	--1273.	30.75	-- 50.12
WAIST CIRCUMFERENCE	304	917.70	36.13	86.92	3.42	706.	--1203.	27.80	-- 47.36
WAIST FRONT	303	419.15	16.50	25.94	1.02	363.	-- 513.	14.29	-- 20.20
HEAD CIRCUMFERENCE	305	578.52	22.78	15.25	0.60	530.	-- 620.	20.87	-- 24.41
HAND CIRCUMFERENCE	305	215.55	8.49	9.34	0.37	186.	-- 241.	7.32	-- 9.49
SHOULDER HEIGHT SITTING	305	621.54	24.47	28.05	1.10	528.	-- 705.	20.79	-- 27.76
SITTING HEIGHT	303	935.46	36.83	33.94	1.34	797.	--1020.	31.38	-- 40.16
KNEE HEIGHT SITTING	305	565.53	22.27	24.47	0.96	489.	-- 625.	19.25	-- 24.61
BUTTOCK KNEE LENGTH	304	617.37	24.31	25.95	1.02	544.	-- 702.	21.42	-- 27.64
SHOULDER BREAOTH	304	499.79	19.68	28.92	1.14	416.	-- 586.	16.38	-- 23.07
HEAD LENGTH	305	199.18	7.84	6.71	0.26	182.	-- 220.	7.17	-- 8.66
HEAD BREAOTH	305	155.25	6.11	5.23	0.21	142.	-- 170.	5.59	-- 6.69
FACE BREAOTH	305	143.30	5.64	5.50	0.22	129.	-- 160.	5.08	-- 6.30
FACE LENGTH	305	122.04	4.80	5.97	0.23	105.	-- 138.	4.13	-- 5.43
LIP LENGTH	305	51.87	2.04	4.10	0.16	39.	-- 64.	1.54	-- 2.52
HAND LENGTH	305	195.57	7.70	8.80	0.35	170.	-- 224.	6.69	-- 8.82
FOREFINGER LENGTH	305	129.36	5.09	7.76	0.31	108.	-- 151.	4.25	-- 5.94
HAND BREAOTH	305	90.60	3.57	4.03	0.16	78.	-- 101.	3.07	-- 3.98
TRIGGER POSITION	265	67.29	2.65	6.52	0.26	54.	-- 88.	2.13	-- 3.46

AGE DISTRIBUTION		****		LENGTH OF SERVICE		****	
		THE PERCENTILES				THE PERCENTILES	
MEAN VALUE	31.45	YEARS		MEAN VALUE	5.40	YEARS	
SE(MEAN)	0.41	55.97	99TH	SE(MEAN)	0.30	24.99	99TH
SD DEVIATION	7.15	52.47	98TH	SD DEVIATION	5.17	20.94	98TH
SE(SD DEV)	0.29	48.91	97TH	SE(SD DEV)	0.21	19.65	97TH
		45.93	95TH			17.95	95TH
****		41.85	90TH	****		13.85	90TH
		38.77	85TH			9.95	85TH
SYMMETRY---VETA I =	1.39	36.60	80TH	SYMMETRY---VETA I =	1.92	8.06	80TH
KURTOSIS---VETA II =	5.41	32.30	75TH	KURTOSIS---VETA II =	6.73	6.91	75TH
COEF. OF VARIATION =	22.7%	33.51	70TH	COEF. OF VARIATION =	94.7%	6.42	70TH
		32.56	65TH			5.93	65TH
		31.88	60TH			5.45	60TH
****		31.04	55TH	****		4.94	55TH
		29.98	50TH			4.21	50TH
NUMBER OF SUBJECTS =	305	29.37	45TH	NUMBER OF SUBJECTS =	305	3.78	45TH
		28.76	40TH			3.46	40TH
		28.19	35TH			3.15	35TH
		27.69	30TH			2.82	30TH
		27.22	25TH			2.49	25TH
		26.51	20TH			2.17	20TH
		25.79	15TH			1.86	15TH
		24.87	10TH			1.57	10TH
		23.52	5TH			1.29	5TH
		22.62	3RD			1.17	3RD
		22.01	2ND			1.11	2ND
		21.01	1ST			1.06	1ST

<u>AGENCY</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: POLICE DEPARTMENT	255	83.61
2: SHERIFF DEPARTMENT	32	10.49
3: HIGHWAY PATROL	4	1.31
4: PRISON/PEN.	14	4.59
5: STATE POLICE	0	0.0
6: OTHER	0	0.0

<u>DUTY</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
0: LEFT BLANK	13	4.26
1: PATROL	194	63.61
2: TRAFFIC	29	9.51
3: INVESTIGATIONS	11	3.61
4: COMMUNICATIONS	2	0.66
5: ADMINISTRATION	7	2.30
6: OTHER	49	16.07

<u>RANK</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: ACADEMY	19	6.23
2: PATROLMAN 3	13	4.26
3: PATROLMAN 2	25	8.20
4: PATROLMAN 1	179	58.69
5: CORPORAL	0	0.0
6: SERGEANT	18	5.90
7: LIEUTENANT	9	2.95
8: MAJOR	0	0.0
9: CAPTAIN	2	0.66
10: INSPECTOR	0	0.0
11: ASSIST CHIEF	0	0.0
12: DEPUTY CHIEF	0	0.0
13: CHIEF	1	0.33
14: MARSHAL	0	0.0
15: OTHER	3	0.98
16: DEPT SHERIFF	26	8.52
17: PRISON GUARD	10	3.28

<u>PREDOMINANT ETHNIC BACKGROUND</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
0: LEFT BLANK	0	0.0
1: BLACK	0	0.0
2: MEXICAN AMERICAN	0	0.0
3: PUERTO RICAN	0	0.0
4: CUBAN	0	0.0
5: HAWAIIAN	0	0.0
6: CHINESE	0	0.0
7: JAPANESE	0	0.0
8: OTHER ORIENTAL	0	0.0
9: AMERICAN INDIAN	0	0.0
10: EAST INDIAN	0	0.0
11: EUROPEAN, NORTH	0	0.0
12: EUROPEAN, EAST	0	0.0
13: EUROPEAN, SOUTH	0	0.0
14: EUROPEAN, WEST	0	0.0
15: OTHER	0	0.0
16: WHITE AMERICAN	305	****
17: AMERICAN	0	0.0
18: CANADIAN	0	0.0
19: SOUTH AMERICAN	0	0.0

<u>PRIOR MILITARY SERVICE</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
LEFT BLANK	0	0.0
YES	213	69.84
NO	92	30.16

<u>HANDEDNESS FOR WEAPON USAGE</u>		
TOTAL NUMBER= 305		
	NUMBER	PER CENT
LEFT BLANK	1	0.33
RIGHT	272	89.18
LEFT	20	6.56
AMBIDEXTROUS	12	3.93

APPENDIX C: STATISTICAL TREATMENTS*

*From White, R. M. and Churchill, Edmund, "The Body Size of Soldiers," United States Army Natick Laboratories, Technical Report 72-61-CE, p 41-46, December 1971, with slight modifications

THE STATISTICAL TREATMENTS

The usefulness of any anthropometric survey depends in large measure on the extent to which the mass of measurement data generated by the survey is translated by statistical analyses into summaries of value in the solution of design and related problems and which point up the important implications of the data. The statistical summaries presented in sections 3 and 4 have been chosen in the belief that they provide the simplest and most generally useful univariate summaries of the more than 120,000 data collected in the present survey. As valuable as these statistics may prove to be, they contain only a small portion of the useful information embodied in the survey data. Additional information should be sought in those statistical treatments which involve the simultaneous distribution of two or more sets of these measurement data.

The summary statistics which traditionally have been included in US military anthropometric reports are provided here for each anthropometric variable. Measures of skewness and kurtosis have been added to the list of summary statistics and a frequency distribution of each variable is presented.

The means, standard deviations, standard errors, and the percentiles are listed in both metric and English units. The statistics are given first (to the left of the statistics' name in the tables) in the metric units and then in the English units. The intervals in the frequency tables follow the same order.

The traditional statistics reported are as follows:

a. The Arithmetic Mean

The arithmetic mean is the most common of the averages; it is what is usually meant when either "mean" or "average" is used without modification. The arithmetic mean of a number of values is the sum of these values divided by the number of values. For example, since the men measured in this survey weighed a grand total of 549,387 pounds, their mean weight was

$$\bar{x} = \frac{\Sigma X}{N} = \frac{549,387}{2991} = 183.68 \text{ pounds}$$

The mean is designated in the statistical literature by several different symbols, the most common being \bar{x} , μ , and M . When more than one set of data are being considered at the same time, the mean values may be denoted variously as: \bar{x} , \bar{y} , \bar{z} , or \bar{x}_1 , \bar{x}_2 , \bar{x}_3 , or M_x , M_y , M_z , or M_1 , M_2 , M_3 , or μ_x , μ_y , μ_z , or μ_1 , μ_2 , μ_3 .

b. The Median

The median, a second average, designates the value of the "man-in-the-middle". If all of the subjects in this survey had been lined up in order from the shortest to the tallest, the height of the man in the middle of the line would be the median height. The definition of the median is identical with that of the 50th percentile, 50 percent of the data being smaller than it is and 50 percent being larger. The value of the median is to be found at the middle of the percentile tables. The procedure used in computing the percentiles and its relationship to the definition of these statistics is discussed below; that discussion is as relevant to the interpretation of the median as it is to that of the other percentile values.

The median and the arithmetic mean have approximately the same values for most of the data gathered in this survey; for these data the question of whether one or the other is the better average is not important.

c. The Standard Deviation

The standard deviation is the basic measure of variability. If most of a set of data cluster close to their mean value, the standard deviation will be small. If on the other hand, many of the data are either much smaller or much larger than the mean, the standard deviation will be large. By definition, the standard deviation is the square root of the average (ie, arithmetic mean) of the squared deviations from the mean value. In formula the standard deviation equals $SD = \sqrt{\Sigma (x - \bar{x})^2 / N}$, where Σ is the summation operator, x represents the individual values, and \bar{x} their arithmetic mean, and N the number of values.

A useful way of conceptualizing the standard deviation is to consider the middle two-thirds of a set of data such as the values of stature. The smallest value in this middle two-thirds will be about one standard deviation below the mean value and the largest value in this set will be roughly equal to the mean value plus one standard deviation. Similarly, the middle 95 percent of the data will have values ranging from approximately two standard deviations below the mean to two standard deviations above it.

The standard deviation is usually designated by SD, S, or σ . Any one of these may be subscripted when several variables are being considered simultaneously. The word "sigma" (σ) is sometimes used verbally to refer to the standard deviation.

d. The Coefficient of Variation

This statistic is a restatement of the standard deviation as a percent of the mean, and it is usually denoted by the letter V. Thus $V = 100 SD / \bar{x}$. The relationships which were noted for the standard deviation have equivalent forms in terms of V. Thus, about two-thirds of a set of data will lie between $(100 - V)$ percent and $(100 + V)$ percent of the mean, while about 95 percent will lie between $(100 - 2V)$ percent and $(100 + 2V)$ percent of the mean.

For many anthropometric variables, the coefficient of variation varies within a much narrower range than does the standard deviation. The value of V is often associated with the general anatomical nature of the variable involved. Long bone lengths (major heights, arm length, and so forth) tend to have coefficients of variation in the 3.5 to 5 percent range, while fleshy circumferences have coefficients which range from 6 percent to 10 percent.

e. The Percentiles

This group of statistics belongs to a class of measures designated as "measures of order or position." These measures can be thought of as being obtained by arranging the data in order from the smallest value up to the largest one and then observing the value of the datum which lies at a specified position in the array. The smallest value, the next-to-the-largest-value, the middle value, and the like are examples of this type of statistic.

Perhaps the most useful of these statistics are the percentiles. The 99 percentiles — ranging from the 1st up to the 99th — are the values at points which separate consecutive blocks or units of 1 percent of the data in the ordered array. The first percentile is the value which separates the smallest 1 percent of the data from the 99 percent of the data with larger values, and the second percentile separates the smallest 2 percent from the larger 98 percent.

Twenty-five of these percentiles: the 1st, 2nd, 3rd, 97th, 98th, 99th, plus the h-th for all values of h which are multiples of 5, are listed for each anthropometric variable. Several of the listed percentiles have additional names; in particular, the 50th percentile is the median, the 25th, 50th, and 75th are the 1st, 2nd, and 3rd quartiles, and the 10th, 20th, 30th, . . . , 90th are the nine deciles.

f. The Standard Errors

All statistics computed from a sample of data are subject to the effects of sampling error. When a sample has been selected by a random or other probability sampling process, it is often possible to estimate the magnitude of the sampling error. For many statistics, this estimate takes the form of the standard error of the statistic. The standard error is a standard deviation type statistic and is such that were a large number of samples of data selected in the same way from the same population, about two-thirds of the samples would have means (or standard deviations or percentiles) with values which lie within one standard error of the corresponding population statistic and 95 percent within two standard errors. Hence, it is conventional to suppose, when dealing with the statistics computed from a single sample, that the population statistics may well be within a standard error – up or down – of the corresponding sample statistics, and that it is rather likely that they are within two standard errors.

Each statistic has its own standard error, the value of which depends on the statistic, on the sample size, and often, on the standard deviation of the data. The standard errors of the most common statistics (except the range) are, for the large samples, inversely proportional in size to the square root of the sample size.

For each variable the standard error of the mean (SD/\sqrt{N}) and that of the standard deviation ($SD/\sqrt{2N}$) are listed. The standard errors of the other statistics used in this report can be computed using the following formulas:

Statistic	Standard Error
30th through 70th Percentiles	1.3 SE of the Mean
20th, 25th, 75th, and 80th Percentiles	1.4 SE of the Mean
15th and 85th Percentiles	1.5 SE of the Mean
10th and 90th Percentiles	1.7 SE of the Mean
5th and 95th Percentiles	2.1 SE of the Mean
3rd and 97th Percentiles	2.5 SE of the Mean
2nd and 98th Percentiles	2.9 SE of the Mean
1st and 99th Percentiles	3.7 SE of the Mean
Coefficient of Variation	$V/\sqrt{2N}$
Veta I	$\sqrt{6/N}$
Veta II	$\sqrt{24/N}$

The standard error is variously designated as SE, SE (ξ) where ξ is the statistic involved, or $\sigma(\xi)$. When a statistic is presented as “164.28 \pm 0.93,” the value “0.93” is usually (though not always) the standard error of that statistic.

The standard error is a well-established statistic of wide-spread use, and it is generally expected that the various standard error values will be included in a report of this type.

Nevertheless, since probability sampling was not used in this survey, it is not clear what relationship exists between these standard errors and the actual sampling errors of the statistics reported here. A similar comment can, of course, be made about the sampling errors for all other large scale, broad anthropometric surveys.

The standard errors of the mean, the standard deviation, and the central percentiles are, in any event, generally rather small, most of them being less than 1 millimeter, a value of no real significance in evaluating these statistics.

g. Veta I – A Measure of Symmetry

The statistic β_1 is based on the fact that in a symmetric distribution every value equal to a given amount greater than the mean will be matched by a value an equal amount less than the mean, so that the cubes of the deviations from the mean – half negative and half positive – will add up to zero. Although the converse of this fact is by no means true – a zero sum of the cubed deviations in no way implies a symmetric distribution – the size of this sum when properly adjusted is often considered a useful indication of whether a set of data is unsymmetrically distributed and, if so, how badly. Such a use seems reasonably justified for the kind of data reported here.

Veta I is computed from the sum of the cubed deviations by dividing it by the sample size and the cube of the standard deviation, producing a dimensionless statistic:

$$\beta_1 = \frac{\sum (x - \bar{x})^3}{N \cdot SD^3}$$

h. Veta II – A Measure of Kurtosis

The statistic β_2 is similarly computed from the fourth powers of the deviations:

$$\beta_2 = \frac{\sum (x - \bar{x})^4}{N \cdot SD^4}$$

The interpretation of β_2 is not obvious; its major value, along with β_1 , is that its value provides a basis for judging the level of agreement between the normal distribution and the actual distribution of the data.

The normal distribution values for β_1 and β_2 are 0 and 3. In theory, data distributions can deviate from either of these values without deviating from the other. For the data of this study, however, deviant values of either β_1 or β_2 are usually accompanied by deviant values of the other. Most of these deviant values indicate positive skewness ($\beta_1 > 0$) and platykurtosis ($\beta_2 > 3$).

i. The Frequency Tables

The frequency tables group the data for each variable into a table containing up to fifty intervals. Most of the variables, except those with the smallest ranges, were grouped into intervals of 5 or 10 millimeters wide.

The tables list, for each interval range, the end points of the intervals in either metric or English units; the number of men whose measurement falls within the interval (F); the cumulative frequency (CUMF), that is the number of men whose measurement did not exceed the upper end point of the interval; and these values expressed as percentages of the total number of men measured (FPCT and CUMPCT).

APPENDIX D: TRIGGER POSITION MEASURING DEVICE

TRIGGER POSITION MEASURING DEVICE

Consultations with weapons manufacturers and with law enforcement officials indicated the need for information about the location of the trigger relative to the heel of the weapon stock. No conventional anthropometric device existed which would supply that information. The closest approximation which could be obtained was the forefinger length (from the tip of the forefinger to the thumb crotch) which was measured by the sliding caliper.

Individual preference for the hand used for firing a weapon in a combat situation (which may or may not be the hand which the officers have been instructed to use during training) and for the position of the finger on the trigger (which may differ considerably from the light touch on the first pad encouraged in some courses of training) made it unlikely that any direct conversion could be made between actual finger length and the preferred trigger position.

In order to obtain the needed information, a special measuring instrument was designed by the Human Factors Division of the Naval Electronics Laboratory Center. The device was handed to subjects with the instructions to consider that it was a "double action revolver" and that it was being used in a "combat situation."

A photograph of the trigger position measuring device and specifications for it are given in figures D-1 and D-2.

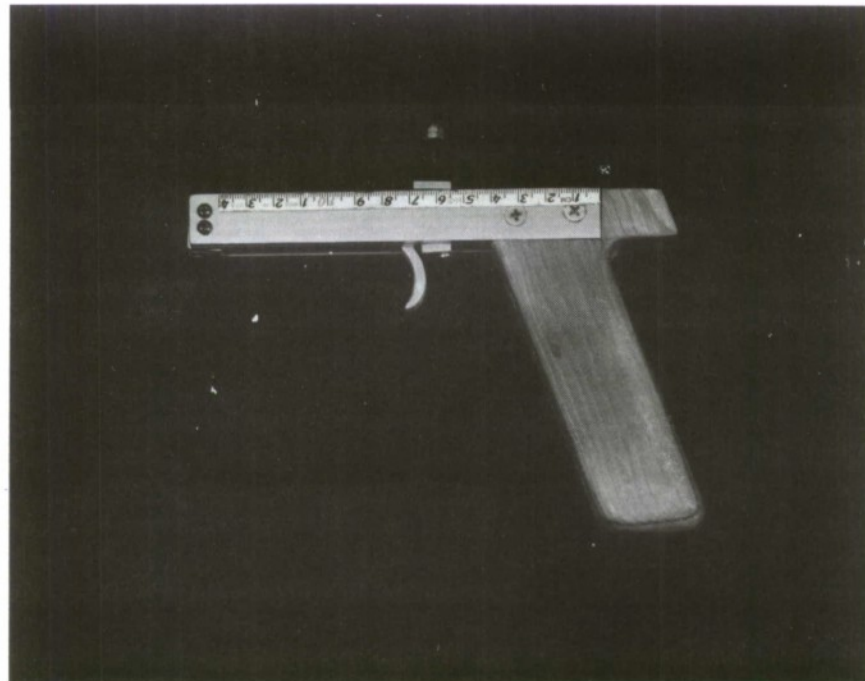


Figure D-1. Trigger position measuring device.

APPENDIX E: PORTABLE ANTHROPOMETRIC BENCH

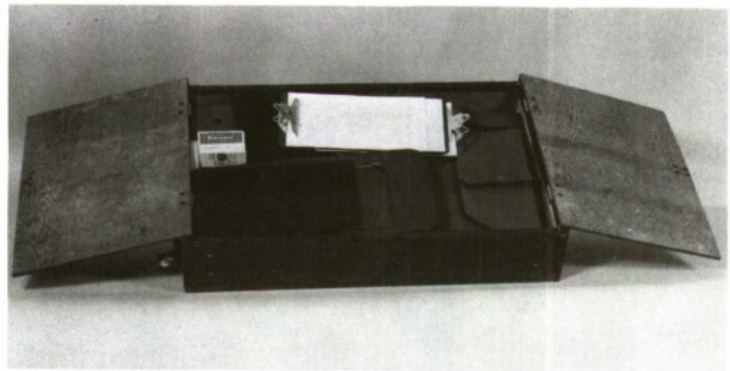
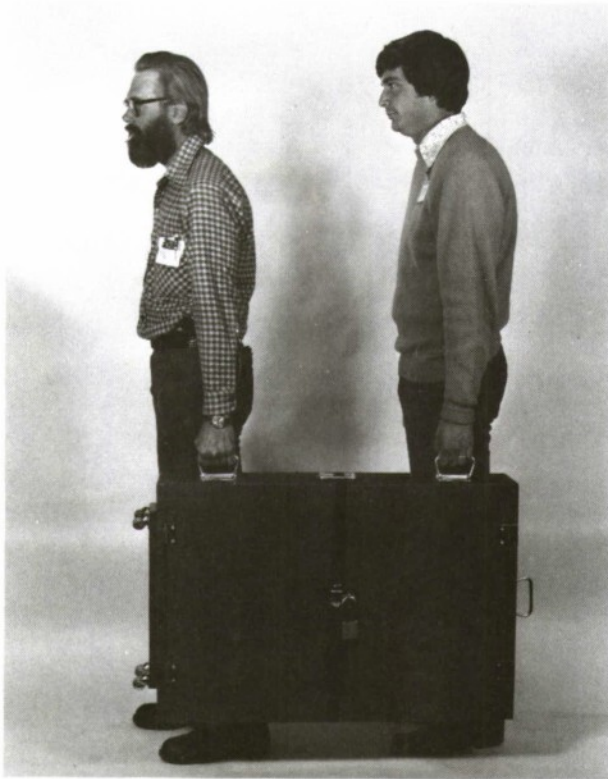


Figure E-1. Portable anthropometric bench.

ANTHROPOMETRIC BENCH

Because the survey required the collecting of data in different agencies in different regions of the country, it was necessary that the measuring teams travel with all the items they would need, and that the equipment be portable. Seldom, during the course of the data collection effort, was it possible to set up the equipment at one location for over a full day; usually it was necessary to make and break the station several times, frequently at different locations. A container which could carry all the equipment which would be needed for the survey was wanted.

Because the facilities where the measuring was conducted varied considerably, it was also necessary to provide a standard seat and an adjustable foot support in order to obtain consistent measurements from location to location.

The design of a portable anthropometric bench by the Human Factor Division of the Naval Electronics Laboratory Center solved both problems. The bench and its specifications are depicted in figures E-1 and E-2. When assembled, the bench served as a standard seat with an adjustable footrest. When disassembled, it served as a container for all the items listed in Appendix A. The wheels on the base made it easy to move horizontally. Vertically, it was a different matter because when it was fully loaded, it weighed over 130 pounds. The portable anthropometric bench served its purpose well, protecting the instruments and materials in transit and serving as a necessary part of the measuring apparatus at the locations visited.

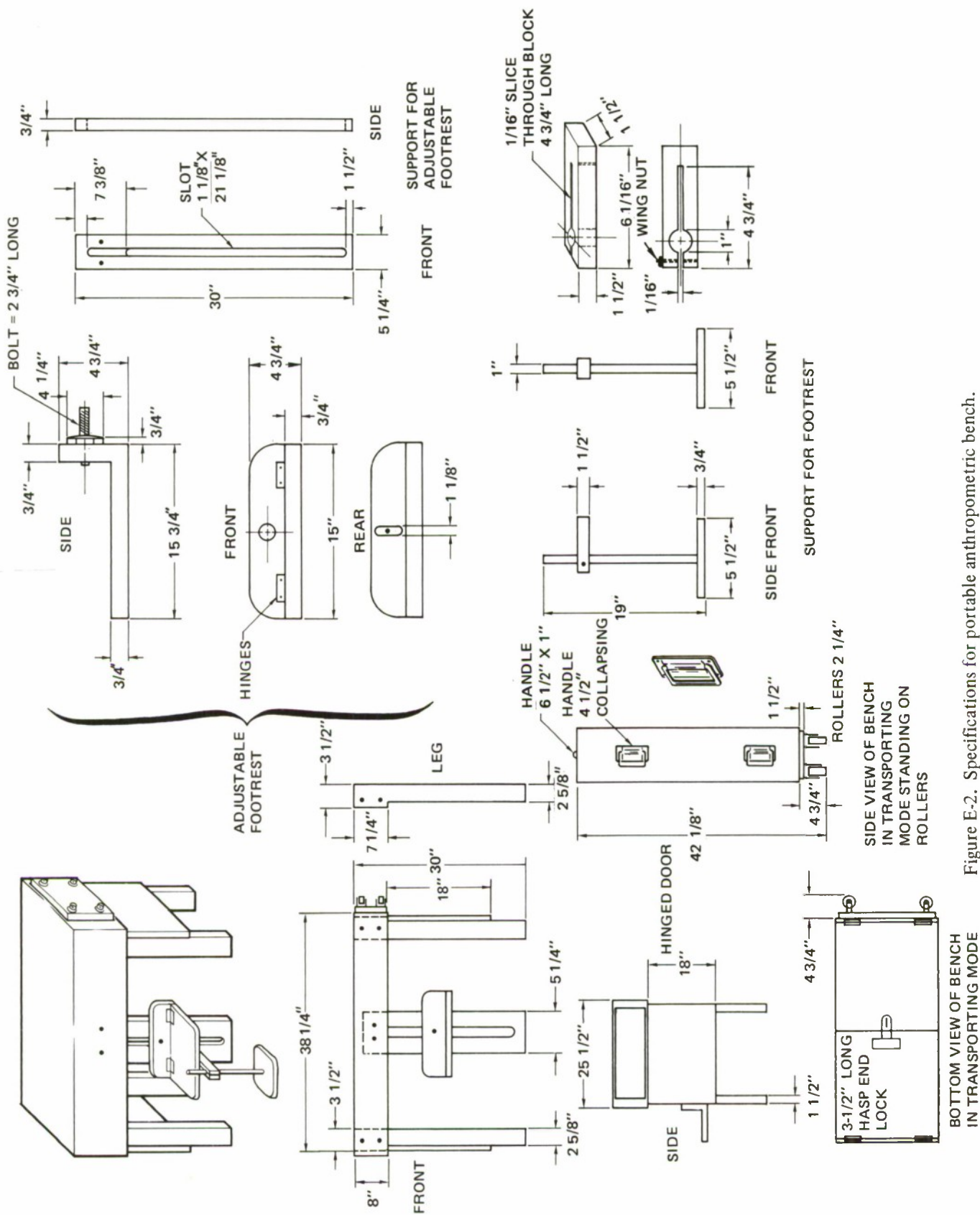


Figure E-2. Specifications for portable anthropometric bench.